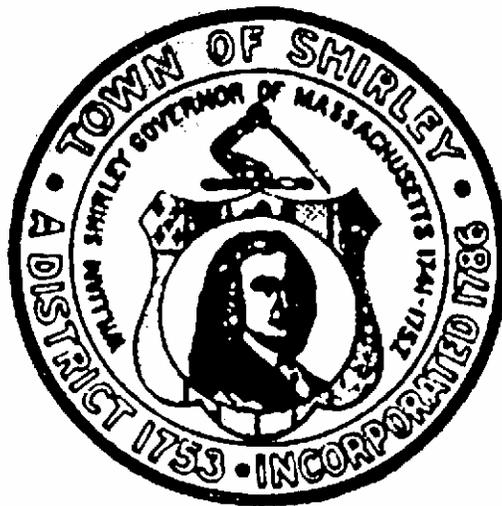


TOWN OF SHIRLEY

PLANNING BOARD



SUBDIVISION RULES & REGULATIONS Revision 1.13

RULES AND REGULATIONS
Of the PLANNING BOARD of the
TOWN OF SHIRLEY, MASSACHUSETTS
GOVERNING THE SUBDIVISION OF LAND
IN
SHIRLEY, MASSACHUSETTS

(Adopted under the Subdivision Control Law Sections 81-K to 81-GG, inclusive, Chapter 41, of the Massachusetts General Laws)

PURPOSE

The subdivision control law has been enacted for the purpose of protecting the safety, convenience and welfare of the Inhabitants of the Town of Shirley by regulating the laying out and construction of ways in subdivision providing access to the several lots therein, but which have not become public ways, protecting and preserving the natural resources of the Town, and ensuring sanitary conditions in subdivision and, in proper cases, parks and open areas. The powers of the Planning Board and of the Board of Appeals under the subdivision control law 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 reduction 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 incurring compliance with the applicable zoning by-laws; for securing adequate provision for water, sewerage, drainage 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.

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APPENDIX

SECTION 1. AUTHORITY

Under the authority vested in the Planning Board of the Town of Shirley by Section 81-Q of Chapter 41 of the Massachusetts General Laws, said Board hereby adopts these rules and regulations governing the subdivision of land within the said Town of Shirley. These rules and regulations shall be effective on and after the first day of May 1956, as amended or revised.

1.0 AMENDMENTS

1.0.1: August 1986 Amendment – Section 2.1 amended to include filing fees for ANR plans.

1.1 REVISIONS

1.1.1: First Revision – October 1984

1.1.2: Second Revision – June 11, 1987

1.1.3: Third Revision – August 2000

SECTION 2. GENERAL

2.0 DEFINITIONS

For the purpose of these Rules and Regulations the following words and terms used herein are hereby defined or the meaning thereof explained, extended or limited as stated in Chapter 41 of the Massachusetts General Laws, as amended. Other terms or words and phrases not defined herein or in the Subdivision Control Law shall be construed according to the common and approved usage of the language, but technical words and phrases and such others as may have acquired a particular and appropriate meaning in law shall be construed and understood according to such meaning.

Abutter. The owner of land sharing a common property line with the owner of land referred to in a subdivision application and the owner of land which is directly across a way from the frontage of said subdivision land.

Applicant. A person who applies for approval of a plan of a subdivision, including one or more persons, a group or association of persons, a partnership or a corporation, and shall include an owner, or his agent or representative, or his assigns.

Board. The Planning Board of the Town of Shirley.

Board of Health. The Shirley Board of Health and the Nashoba Associated Boards of Health, as its appointed agent.

Buffer Zone. An area to remain undisturbed for the required width for the purpose of lessening audible and visual impacts from adjoining areas.

Definitive Plan. A plan meeting the complete criteria of section 3.2 of these rules and regulations and the subdivision control law.

Easement. A right acquired by a public authority or other person or legal entity for use or control of land for utility or other designated public or private purpose.

Engineer. Any person who has been registered or otherwise legally authorized by the Commonwealth of Massachusetts to perform professional civil engineering services.

Frontage. The length of common boundary between a lot and a street legally qualifying to provide frontage for the division of land under the applicable Town of Shirley Zoning By-laws, measured continuously along one street line between side lot lines and their intersection with the street line, or in the case of a corner lot, to the midpoint of the corner arc.

General Laws. The General Laws of the Commonwealth of Massachusetts as enacted in 1920 with all additions thereto and amendments thereof. In the case of

rearrangement of the General Laws, any citation of particular sections of said Laws shall include the corresponding sections of the new codification.

Lot. An area of land with definite boundaries ascertainable or to be ascertainable of record, and used, or set aside and available for use, as a site of one or more buildings and buildings accessory thereto and for any other definite purpose.

Municipal Services. Sewers, surface water drains, and other private or public utilities including water pipes, gas pipes, electric lines, telephone lines, fire alarm lines, cable television lines, and their respective appurtenances (see section 3.2.3.b.).

Master Plan. A comprehensive plan prepared by the Planning Board pursuant tot Chapter 41, Section 81-D, of the General Laws, as amended, to indicate the general location recommended for the various functional classes of public works, places, and structures, and for the general physical development of the Town of Shirley, and includes any unit or part of such plan separately adopted and any amendment to such plan or parts thereof.

Permanent Benchmark. A permanent reference point with the elevation accurately established by stone bounds and referenced to the United States Coast and Geodetic Survey datum.

Person. This term shall include an individual, two or more individuals, a group or association of persons having common or undivided interests in a tract of land, a partnership or corporation.

Plan. The final map, drawing or chart on which the subdivider's plan of subdivision is presented to the Planning Board for approval, and which, if approved, will be submitted to the Registry of Deeds for recording or registration.

Record Plan. The proposed definitive plan of a subdivision to be recorded in the Registry of Deeds when approved by the Board, and such plans when approved and recorded.

Right-of-Way. The full strip of land designated as a way, consisting of the roadway, and any planting strips and sidewalks. A way so designated shall be available only for such uses as are customary for ways in the Town, and shall not be available for any private construction such as buildings, fuel tanks, septic tanks, fences or walls.

Roadway. That portion of the way, right of way or street layout which has been prepared and constructed for vehicular traffic.

Street. The entire width of a right of way.

Street Categories:

Collector: A street with anticipated traffic equivalent to that generated by fifty (50) homes or more, or which serves abutting land zoned for business or industry.

Dead-end: A street or street system which has only one means of ingress from or egress to a collector or minor street.

Minor: A street which can be expected to handle less traffic than a collector street and which serves no more than fifty (50) dwellings and can not be extended, and which serves no abutting land zoned for business or industry.

Paper: Any way or right of way shown on a plan or sketch but which has not been constructed or otherwise prepared for vehicular traffic.

Subdivider. A person undertaking the subdivision of a tract of land.

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 was made, every lot within the tract so divided has frontage on:

- (a) a public way or a way which the Town Clerk certifies is maintained and used as a public way, or
- (b) a way shown on a plan theretofore approved and endorsed in accordance with the subdivision control law, or
- (c) a way in existence when the subdivision control law became effective in the Town of Shirley having, in the opinion of the Planning Board, sufficient width, suitable grades and adequate construction to proved for the needs of the 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.

Subdivision Control Law. Sections 81-K to 81-GG, inclusive, of Chapter 41, of the General Laws of the Commonwealth of Massachusetts.

Surveyor. Any person who has been registered or otherwise legally authorized by the Commonwealth of Massachusetts to perform land surveying services.

Ways. (See Street Categories)

SECTION 2.1 PLANS BELIEVED NOT TO REQUIRE APPROVAL

Any person, who wishes to cause to be recorded in the Registry of Deeds or to be filed with the Land Court a plan of land and who believes that said plan does not require approval under the Subdivision Control Law, may submit

- a.) the original of said plan

- b.) five (5) copies thereof
- c.) five (5) completed Form A applications,
“Applications for Endorsement of Plan Not
Requiring Approval” (see Appendix); and
- d.) a filing fee of \$50.00 (for the Planning Board endorsement) PLUS \$50.00 for
each additional lot created

to the Planning Board, as per Mass General Law. As a minimum requirements the plan submitted shall include existing and proposed lot lines, the distances and bearings, names of abutting property owners, the zoning district designation applicable to the lot or lots, the frontage and offsets at the date of filing, zone boundaries, if any, a general locus plan showing neighboring streets, ways and properties, and the statement “Approval Under Subdivision Control Law Not Required” with sufficient space for the date and the signatures of all members of the Board. If the lot or lots requiring approval are part of an approved or proposed subdivision, then five (5) prints of the subdivision plan shall be submitted. Said person shall file, by delivery or by registered mail, postage pre-paid, a copy of Form A with the Town Clerk stating the date of submission of said plan to the Planning Board.

If the Board finds that such plan does not require approval, said Planning Board shall, without a public hearing and without unnecessary delay, endorse said plan. Said plan shall be returned to the applicant and the Board shall notify the Town Clerk of its action. Such endorsement shall not be deemed to constitute any determination of compliance with requirements of the Town of Shirley Zoning By-laws.

If the Board determines that the plan requires approval under the Subdivision Control Law, it shall, within twenty-one(21) days of submission of said plan so inform the applicant and the Town Clerk of its determination in writing, and such person may submit his plan for approval as provided by law and the Rules and Regulations of the Board, or may appeal from the determination of the Board in the manner provided in Chapter 41, Section 81BB of the General Laws. If the Planning Board fails to act upon a plan submitted under this section within twenty-one (21) days after its submission, it shall be deemed to have determined that approval under the Subdivision Control Law is not required, and it shall forthwith make such endorsement on said plan and, on its failure to do so forthwith, the Town Clerk shall issue a certificate to the same effect. The plan bearing such endorsement or the plan and such certificate, as the case may be, shall be delivered forthwith by the Board, or in the case of the certificate, by the Town Clerk, to the person submitting such plan.

2.2 SUBDIVISION

No person shall make a subdivision within the meaning of the Subdivision Control Law of any land within the Town of Shirley or proceed with the improvements 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 and approved by the Planning Board and recorded with the Registry of Deeds, as hereinafter provided.

2.3 COMPLIANCE WITH ZONING

No subdivision plan shall be approved by the Planning Board unless the size, shape, width, frontage and use of all lots within the subdivision comply with the applicable provisions of the Town of Shirley Zoning By-laws, or a variance from the terms thereof has been granted by the Town of Shirley Board of Appeals.

2.4 MORE THAN ONE BUILDING FOR DWELLING PURPOSES ON A LOT

Not more than one building designed or available for use for dwelling purposes shall be erected or placed or converted to use as such on any lot in a subdivision, or elsewhere in the Town of Shirley, without the consent of the Planning Board and, that such consent may be conditional upon the providing of adequate ways furnishing access to each site for such building, in the same manner as otherwise required for lots within a subdivision, and on meeting the goals of the Master Plan, Open Space Plan and the intent of the Shirley Zoning By-law, and such provisions as Cluster Housing under Section 4.2 of this By-law, if applicable.

2.5 EXPERT OPINIONS OR ADVICE

The Board may assign as its agents appropriate Town agencies or officials, including department heads and Town Counsel, and may, from time to time engage professional assistance to review plans, to conduct water, soil and any other tests deemed appropriate by the Board or such professionals. The Board may require such Town officials or professionals to report their comments or test results to the Board, to provide the Board with expert opinion on the applicant's proposal and to inspect improvements. All costs for such services by Town officials and outside professionals shall be borne by the applicant and payment therefore may be requested in advance.

Funds received by the Board pursuant to this section for outside professionals shall be deposited with the Town Treasurer who shall establish a special account for this purpose. Expenditures from this special account may be made at the direction of the Board without further appropriation. Expenditures from this special account shall be made only in connection with the review of a specific project or projects for which a review fee has been or will be collected from the applicant. Failure of an applicant to pay a review fee shall be grounds for denial of the application.

At the completion of the Board's review of a project, and with the written approval of the Planning Board, any excess amount in the account, including interest, attributable to a specific project, shall be made available to the applicant or the applicant's successor in interest. For the purpose of this regulation, any person or entity claiming to be an applicant's successor in interest shall provide the Board with documentation establishing such succession in interest.

Any applicant may take an administrative appeal from the selection of an outside consultant to the Board of Selectmen by filing a written claim of appeal with the Selectmen, with a copy to the Planning Board within 20 days after the date of the written notice by which the Planning Board notifies the applicant of its selection of a consultant. The grounds for such an appeal shall be limited to claims that the consultant selected has a conflict of interest or does not possess the minimum, required qualifications. The minimum qualifications shall consist either of an educational degree in or related to, the field at issue or three or more years of practice in the field at issue or a related field. The required time limit for action upon an application by the Board shall be extended by the duration of the administrative appeal. In the event that no decision is made by the Board of Selectmen within one month following the filing of appeal, the selection made by the Board shall stand.

SECTION 3. PROCEDURE FOR THE SUBMISSION AND APPROVAL OF PLANS

3.0 PRE-SUBMISSION REVIEW

Prior to investing in extensive professional design efforts for subdivision plans, it will often prove useful to review the proposed development of a parcel of land with the Planning Board, in order that general approaches and potential problems can be freely explored. Pencil sketches, which need not be professionally prepared, will assist in the discussion and might show some but not all of the information shown on a Preliminary Plan. In some cases, except for nonresidential subdivisions, this pre-submission review may eliminate the need for such a Preliminary Plan.

3.1 PRELIMINARY PLAN

3.1.1 GENERAL

A Preliminary Plan of a subdivision may be submitted and, in the case of nonresidential subdivisions, must be submitted by the subdivider to the Planning Board and, through the Board, to the Board of Health and the Conservation Commission for comments relative to the overall concept of the plan and to specific concerns regarding either the overall site or specific lots and ways shown on the plan. Such comments from the Conservation Commission may include, but shall not be limited to, concerns relative to the current status of the flow and quality of subsurface and surface water, unique geological, botanical, zoological and archaeological features and historical sites, existing trails, existing open space and the health and safety of the inhabitants of the area. Such submission shall be for discussion and approval, modification or disapproval by the Board. The submission of such a Preliminary Plan shall be made on Form B, "Application for Approval of a Preliminary Plan" (see Appendix) and, such submission will enable the subdivider, the Board, the Board of Health, other municipal agencies and owners of property abutting the subdivision to discuss and clarify the problems of such subdivision before a Definitive Plan is prepared. Therefore, it is strongly recommended that a Preliminary Plan be filed in every case.

Fifteen (15) copies of the Preliminary Plan shall be submitted, along with fifteen (15) completed copies of Form B, to the Planning Board at a regularly scheduled meeting, together with the fee (which shall be credited toward the fee required for the Definitive Plan) of \$150.00 plus \$70.00 per lot created, to cover costs of processing and review. The applicant shall subsequently give written notice to the Town Clerk by delivery or by registered mail, postage pre-paid, that such Preliminary Plan has been submitted, stating the date of such submission of said Preliminary Plan to the Planning Board. Said notice shall include a copy of the completed Form B.

3.1.2 CONTENTS

The Preliminary Plan shall be drawn by a surveyor or engineer with modern drafting techniques through the use of cad or on tracing paper or tracing cloth 24 inches by 36 inches, in pencil, preferably at a scale of one (1) inch equals forty (40) feet, and shall be clearly designated "Preliminary Plan". Such plan shall show:

- a. The subdivision name, boundaries, north point, date, scale, legend and title;
- b. Name and address of the record owner, applicant and designer, and engineer or surveyor;
- c. The names of all abutters as determined from the most recent Town tax list;
- d. The existing and proposed lines of streets, ways, easements, and any public areas within the subdivision;
- e. The location, names, and present widths of streets bounding, approaching or near the subdivision;
- f. The topography of the land in a general manner, including contour lines which are shown on the Zoning Map as boundaries of any Conservation District; and other contours, including those based on the USGS topographic maps, when required by the Board;
- g. The proposed system of water, proposed system of drainage, including existing natural waterways, and the proposed system of sewerage in a general manner both within and adjacent to the subdivision;
- h. The approximate boundary lines of proposed lots, with approximate areas and dimensions and approximate location of proposed buildings in a general manner;
- i. Estimates of the grades of proposed streets and ways or profiles of same;
- j. Major site features such as existing stonewalls, fences, buildings, large trees or wooded areas, rock ridges and outcroppings, swamps and water bodies.
- k. Proof of current payment status for applicable local taxes, fees and municipal charges.
- l. Depiction of the building envelope per lot.

The Preliminary Plan must be accompanied by a separate written statement of existing zoning, current easements, covenants, conditions or

restrictions which affect the site, if any, and a statement of proposed easements, covenants, conditions, or restrictions, including information concerning any land assessed under the provision of Chapters 61 (forest), 61A (agriculture and horticulture) or 61B (recreational) of the General Laws.

In the case of a Preliminary Plan of a subdivision covering less than all of the land owned by the subdivider in the area of the subdivision, the Board may request that a plan, showing, in a general manner, the overall proposed development of all of the land owned by the subdivider in the area of the subdivision and which indicates the section for which the approval is being sought, be submitted.

During the discussion of the Preliminary Plan the complete information required for the Definitive Plan (see Section 3.2.2, Content) and the financial arrangements (see Section 3.2.5, Performance Guarantee) will be developed.

3.1.3 FIELD TRIP

After the regular Planning Board meeting at which the Preliminary Subdivision Plan is first discussed, the Planning Board may schedule a field trip to the site of the proposed subdivision, accompanied by the applicant or his representative. In order to facilitate such a field inspection and review of the site of the proposed subdivision, temporary staking will be required along wetland borders and along the center line of all proposed streets or ways in the subdivision in time for such field trip or, if impractical, the Planning Board shall permit a suitable alternative procedure.

3.1.4 APPROVAL

The Planning Board shall, within forty-five (45) days, approve such Preliminary Plan, with or without suggested modifications or with modifications agreed to by the person submitting such plan or disapprove such plan with a detailed, written statement of the reasons for such disapproval. In the event that the Planning Board approves such plan, such approval does not constitute approval of the subdivision but does facilitate the procedure for securing final approval of the Definitive Plan.

The Board shall notify the Town Clerk of its action on each Preliminary Plan in writing within the said forty-five (45) day period.

Any plan submitted by a subdivider to the Board which does not conform to the requirements hereof pertaining to a Preliminary Plan shall not be so designated, nor shall such plan be given approval by the Board.

The submission of the Preliminary Plan for examination by the Board shall not be deemed a submission of a Definitive Plan of a subdivision of land for approval by the Board under Chapter 41, Section 81-L of the General Laws,

and the action of the Board relative to such Preliminary Plan shall not prejudice its action on the Definitive Plan.

3.2 DEFINITIVE PLAN

3.2.1 GENERAL

A Definitive Plan shall be filed by the applicant with the Planning Board at a regularly scheduled meeting, along with:

- a. Fifteen (15) contact prints of the Definitive Plan;
- b. Fifteen (15) copies of completed Form C, "Application for Approval of Definitive Plan";
- c. Fifteen (15) copies of accompanying statements regarding zoning, easements, data on percolation tests and plans, specifications and profiles for water supply, sewerage and drainage, as required below;
- d. Evidence that the Definitive Plan conforms to the approved Preliminary Plan, if any, or that the Definitive Plan includes the modifications required by the Board's action on the Preliminary Plan;
- e. Completed Form E, "Certified List of Abutters", certified by the Assessor's Office of the Town of Shirley;
- f. Fee of \$500.00 plus \$100.00 for each lot or portion thereof of the land to be subdivided to cover the costs of processing, mailing and planning checks. In the event that the Planning Board determines that expert technical opinion is necessary to arrive at an informed decision about a subdivision and its impact, the cost of that expertise shall be paid for, in advance of the rendering of such opinion, by the subdivider.

The applicant shall also file with the Town Clerk's office by delivery (receipt required) or by mailing by registered mail, postage pre-paid, a written notice stating that a Definitive Plan has been submitted in accordance with the provisions of Chapter 41, Section 81-T, as amended, indicating the date of submission of said Definitive Plan to the Planning Board, along with a copy of completed Form C.

The applicant shall also file two (2) contact prints of the Definitive Plan and a copy of the completed Form C with the Board of Health.

3.2.2 CONTENTS

The Definitive Plan shall be prepared by a Registered Professional Engineer and/or Land Surveyor with modern drafting techniques through the use of cad or shall be clearly and legibly drawn in black India ink upon tracing cloth or mylar and shall be 24" x 36" in over-all minimum dimensions. There shall be a one (1) inch margin for filing purposes left on one 24" edge of each sheet. The prints shall be at a scale of not less than one (1) inch equals forty (40) feet or such other scale as the Board may prescribe to show details clearly and adequately. Profiles of proposed streets shall be drawn to the same horizontal scale as the Plan and with vertical scale ten (10) times

larger unless otherwise authorized and either on the same sheet as the Plan or on separate tracing cloth or mylar and of the same dimensions as the Plan sheets. If multiple sheets are used, they shall be accompanied by an index sheet showing the entire subdivision. In addition to submittal information required for a preliminary plan, the Definitive Plan shall contain the following information:

- a. A title block shall be located at a lower corner and shall contain the subdivision name, the surveyor's and/or engineer's name and seal, the name of the owner and/or applicant, and the date;
- b. A locus map at a scale of one (1) inch equals one thousand (1000) feet showing the proposed streets and the subdivision in relation to existing streets in the immediate vicinity and Zoning District boundaries and district classifications;
- c. Suitable space, preferably located at a lower corner, shall be reserved for recording the action of the Board, the date of such action, and the signatures of the members of the Board;
- d. Where existing bench marks do not exist within a reasonable distance from the subdivision, at least two (2) permanent bench marks shall be set;
- e. Boundary lines of bordering adjacent land or of land across an adjoining street or way from the property being subdivided and the names of the owners of such abutting land, as determined from the most recent Town tax list;
- f. Existing and proposed lines of streets, ways, easements, and any public or common areas within the subdivision;
- g. Location, direction, names and present widths and grades of streets and public or private ways bounding, approaching or within a reasonable proximity of the subdivision;
- h. Location and outline of all existing buildings and site features such as existing stonewalls, fences, large trees or wooded areas, rock ridges and outcroppings, swamps, flood plain areas, waterbodies and watercourses, including depth of water and direction of flow within or adjacent to the proposed subdivision;
- i. Existing and proposed topography with two (2) foot contours based on mean sea level data or at a suitable interval as required by the Planning Board, and those contour lines shown on the Zoning Map as bounding any Conservation District within or immediately adjoining the proposed subdivision;
- j. Acreage of each lot and lot lines, bearings and lengths thereof in conformity with the Zoning By-Law in each case, and all lots shall be designated numerically and in sequence;
- k. Location of existing and proposed monuments, hydrants, public utility facilities, water pipes, fire ponds and wells within the subdivision;
- l. Park or open area suitably located for conservation, playground or recreational purposes within the subdivision, if any;
- m. Proposed storm drainage of land, including existing natural waterways and the proposed disposition of water from the proposed subdivision to adequate natural drainage channels or artificial means of disposal thereof;

- n. Location and purpose of all existing and proposed easements within the subdivision;
- o. Street plans and profiles must show the percent of grade, radii and length of curves, the point of curvature and the point of tangency of curves;
- p. Street plans and profiles must show, in addition to the proposed grade, present elevations of the center line and of both sides of proposed streets at fifty (50) stations;
- q. Whenever uncertainty exists regarding areas claimed to be "buildable land" or upon request of the Board or the Board of Health or the Conservation Commission, the definitive Plan shall also contain the approximate proposed location of the main building or buildings on each lot in question, such location to comply with the Zoning By-Law;
- r. Location of all deep hole tests and percolation tests which may be required by the Board of Health;
- s. Location of buildings or parts thereof located outside of but within fifty (5) feet of the subdivision;
- t. The statement, "No building or structure shall be built or placed on any lot without a permit from the Board of Health".
- u. Depiction of the building envelope per lot.

Where the owner or subdivider also owns or controls unsubdivided land adjacent to or across an existing street or way from that shown on the Definitive Plan, the applicant shall submit a sketch plan showing a possible or prospective street layout and the present drainage, natural and constructed, for such adjacent land, unless such a plan has already been submitted to the Board with a Preliminary Plan.

3.2.3 ACCOMPANYING STATEMENTS OR DATA

The Definitive Plan shall be accompanied by fifteen (15) copies of written statements on:

- a. Existing zoning and any easements, covenants, conditions, and restrictions applying to the area proposed to be subdivided;
- b. Data and proposed arrangements for water supply, sewerage, electricity, cable T.V. and a sewage disposal including all appurtenances, as required by the Board of Health. If the applicant proposes not to use one or more municipal services, a waiver is required.
- c. Drainage calculations prepared by the applicant's engineer, including design criteria, drainage area and other information sufficient for the Board to verify the size of any proposed drain, swale, drainfield, culvert, bridge or catch basin. Said calculations shall be made separately for each drainage facility showing its location, the total upstream drainage area, the percentage of impervious surface, the runoff per acre, the design runoff, facility size, slope and capacity, and the velocity of the water through it;

- d. Logs of results of all test pits made;
- e. The environmental impact of the proposed subdivision to be described according to Section 3.2.3.1, below, except that the Board may waive some or all of these requirements.

3.2.3.1 ENVIRONMENTAL IMPACT STATEMENT

The applicant shall also submit five (5) copies of an environmental impact statement, the purpose of which is to enable the officials of the Town to determine what methods are to be used by the applicant to promote the environmental health of the community and to minimize adverse effects on the natural resources of the Town. This statement will also address the economic impact resulting to the Town as the result of the development, as well as its effects on Town demographics and traffic during and after construction.

In preparing the statement the applicant should refer to the "Open Space and Recreation Plan for Shirley", prepared by the Conservation Commission, and the Master Plan prepared by the Planning Board. The statement should include specific references to the appropriate plans and Town maps. The statement shall be a technical document with references for all statements whenever possible.

In reviewing the statement, the Town boards, department heads and other officials will consider the degree to which water is recycled back into the ground, the maintenance and improvement of the flow and quality of surface waters, the preservation of historic sites, unique geological, botanical, zoological, and archaeological features, the effect on the natural resource base, the extent of dedicated open space, the degree of disruption of existing topography and vegetation, existing or potential trails and accesses to open space area, proposed land management, and the health and safety of the inhabitants of the area.

The Planning Board may waive any section or sections of the Environmental Impact Statement which it deems inapplicable to the proposed project. The developer/subdivider should discuss the requirements with the Board prior to the preparation of the statement and prior to the submission of the Definitive Plan.

The Environmental Impact Statement shall contain the following:

a. Physical Environment:

1. Description of the general physical conditions of the site, including amounts and varieties of vegetation, general topography, unusual geologic, scenic and historical features, stone walls, trees over 16 inches in diameter, trails and open space links and indigenous wildlife;

2. Description of how the project will affect these features;
3. A complete physical description of the project and its relationship to the surrounding areas;
4. Environmental Assessment Report (EAR): The Planning Board may require the following comparative Ear for residential subdivisions and does require such EAR for nonresidential subdivisions. The scope of the EAR, including the nature and extent of alternatives, environmental analysis, and components of environmental quality, shall include the Proposed Plan (preferred alternative) and may include up to two (2) additional build alternatives, including a cluster residential housing plan under Section 4.2 of the Shirley Zoning Bylaw, if applicable. Environmental baseline conditions (i.e., the No-Build Alternative) shall be established by projecting existing conditions and trends to the analysis year(s). The primary (short/long term) and secondary (short/long term) environmental impacts, the changes in environmental baselines caused by implementation of a build alternative, shall be identified, measured (magnitude), qualified (beneficial or adverse), and classified (significance) for each component of environmental quality in the analysis year(s). The impacts of each build alternative shall be analyzed in equal depth and shall be presented in comparative form. The level of effort expended in the analysis for each component shall be proportional to the significance of the environmental impact. All measures to mitigate adverse impacts shall be identified whether or not the Applicant intends to implement them. The EAR shall include Summary, Description of alternative, Environmental Analysis, Mitigating Measures, and Unavoidable Adverse Impacts.

b. Surface Water and Soils:

1. Description of the location, extent and type of existing water and wetlands, including existing surface drainage characteristics, both within and adjacent to the project;
2. Description of the methods to be used during construction to control erosion and sedimentation; i.e., use of sediment basins and type of mulching, matting or temporary vegetation; description of approximate size and location of land to be cleared at any given time and length of time of exposure; covering of soil stockpiles; and other control methods to be used;

3. Evaluation of the effectiveness of the proposed methods on the site and on the surrounding areas;
 4. Description of the permanent methods to be used to control erosion and sedimentation. This description shall include a description of:
 - a. any areas subject to flooding or ponding;
 - b. proposed surface drainage system;
 - c. proposed land grading and permanent vegetation cover;
 - d. methods to be used to protect existing vegetation;
 - e. the relationship of the development to the topography;
 - f. any proposed alterations of shore lines, marshes or seasonal wet areas;
 - g. any existing or proposed flood control or wetland easements;
 - h. estimated increase of peak run-off caused by altered surface conditions and methods to be used to return water to the soils.
 5. Complete description of the sewage disposal methods;
 6. Evaluation of the impact of the disposal methods on surface water, soils and vegetation.
- c. Sub-Surface Conditions:
1. Description of any limitations on the proposed project caused by sub-surface soil and water conditions and methods to be used to overcome them;
 2. Description of the procedures and findings of percolation tests conducted on the site;
 3. Evaluation of the impact of sewage disposal methods on the quality of sub-surface water;
 4. Proposed elevations of structures. (Bottom of basement floor shall be no less than eighteen (18) inches above the historical high ground water table elevation, as determined by monitoring wells, United States Geological Survey data or other documentation deemed reliable by the Planning Board.)

d. General Impact:

On Town Services:

1. Description of estimated traffic flow at peak periods and proposed circulation patterns;
2. Description of the locations and numbers of vehicles accommodated in parking areas;
3. Description of the effect of the project on police and fire protection services;
4. Description of the effect of the project on the public works department services;
5. Description of the effect of the project on educational services;
6. Description of the effect of the project on the Town water supply and distribution system.

On Open Space:

1. Compatibility with Open Space Plan;
2. Compatibility with Open Space goals of the Master Plan;
3. Protection of unique natural features.

On the Human Environment:

1. Tabulation of the proposed buildings by type, size (number of bedrooms, floor area), ground coverage, and a summary showing the percentage of the tract to be occupied by buildings, parking and other paved vehicular areas, and usable open land;
2. Description of the type of construction, building materials used, location of common areas, location and type of service facilities (laundry, trash, garbage disposal);
3. Description of the lighting, screening and security provisions;
4. Statement of the proximity to transportation, shopping and educational facilities;
5. Description of the proposed recreational facilities, including active and passive types; and age groups participating, and a

statement of the extent to which recreational facilities and open space will be available to all Shirley residents.

3.2.4 REVIEW

3.2.4.1 BOARD OF HEALTH AS TO SUITABILITY OF LAND

The Applicant will file with the Board of Health two (2) prints of the proposed plan, in accordance with Section 3.2.1. The Board of Health shall, within forty-five (45) days after filing the plan, report to the Planning Board, in writing, and 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, or is unsuitable because of drainage conditions, and include such specific findings and reasons therefore in such report and, where possible, shall make recommendations for the adjustment thereof. At the time of filing of the Definitive Plan, the applicant shall stake all proposed lots and mark proposed lot numbers on said lots for identification to facilitate review of the Definitive Plan by the appropriate authorities.

Notwithstanding the above, a permit to construct an individual sub-surface absorption area for sewage disposal shall be obtained from the Board of Health, or verification of sewer system connection approval shall be obtained from the Sewer Commissioners, for each individual lot prior to the issuance of a building permit. A condition shall be inscribed on the Definitive Plan as follows: "No building or structure shall be built or placed on any lot without a permit from the Board of Health or Sewer Commissioners".

3.2.4.2 OTHER TOWN OFFICIALS

Before approval of the Definitive Plan is given, the Board will obtain appropriate checks on the engineering and survey information shown on said plan, and written statements that the proposed improvements shown are laid out to the satisfaction of the official, and for the facilities, below:

- a. The Highway Surveyor and the planning consultant or engineer designated by the Board as to the design of the street system, location of easements and design of the sewerage, water and drainage systems, including appurtenances;
- b. The Tree Warden, as to location, size and species of street trees;
- c. The Conservation Commission as to natural resource and scenic factors. The Board will request the Commission to make specific findings as to the presence within or adjacent to the subdivision of lands of special scenic, open space and

recreational value or of groundwater or aquifer value or of an especially fragile nature or tendency toward erosion;

- d. Proof of documentation from the Water and Sewer Departments for availability of tie-ins;

If all provisions of Section 3.2.1 through 3.2.4.2.d are not met, an application will not be considered a complete application and will not be processed.

3.2.4.3 PUBLIC HEARINGS

Before approval, modification or disapproval of the Definitive Plan is given, a public hearing shall be held by the Planning Board. Notice of such hearing shall be given by an official publication of the Town, or in a newspaper of general circulation in the Town of Shirley, once in each of two (2) successive weeks, the first publication being not less than fourteen (14) days before the day of such public hearing, at the expense of the applicant. A copy of said notice shall be mailed by certified mail to the applicant and to all owners of land submitted on Form D, "Certified List of Abutters", and shall be posted in the Town Municipal Building and the U.S. Post Office at least five (5) days prior to the hearing.

3.2.5 PERFORMANCE GUARANTEE

Before endorsement of approval of a Definitive Plan, the Board will require provision for the completion of construction of streets and the installation of municipal services in accordance with the Rules and Regulations of the Board. The construction of the streets and installation of municipal services within the period required by the Board shall be secured by one, or in part by one and in part by the other, of the following methods, which may from time to time be varied by the applicant:

- a. Final Approval with Bonds or Surety

The subdivider shall either file a performance bond or a deposit of money or negotiable securities in an amount determined by the Board to be sufficient to cover the costs of all or any part of the improvements specified in Section 4 not covered by a covenant under "b" hereof. The cost of construction of roadways and appurtenances shall be calculated in accordance with the Standard Specification for Highways and Bridges of the Massachusetts Highway Department. Such bond or security, if filed or deposited, shall be approved as to form and manner of execution by the Town Counsel and as to sureties by the Town Treasurer, and shall be contingent on the completion of such improvements within two (2) years of the date of the bond.

b. Final Approval with Covenants of Conditions

The Subdivider shall file a covenant of conditions acceptable to the Board, executed and duly recorded in the Middlesex Southern Registry of Deeds by the owner of record, running with the land, whereby conditions specified in the certificate of approval are met, and such ways and services as specified in Section 4 shall be provided to serve any lot before such lot may be built upon or conveyed other than by mortgage deed. Such covenant of conditions shall be endorsed upon the Definitive Plan or referred to thereon.

c. Maintenance and Operation Bond

The subdivider shall provide a Maintenance and Operation Bond which will be calculated to cover the cost of grading, re-stabilization of soils, tree plantings, trash removal, snow plowing, roadway and improvement maintenance until the subdivision streets have been accepted by the Town as public ways. The amount of such bond shall be approved by the Highway Surveyor and shall be at least ten (10%) percent of the amount of the performance bond.

3.2.6 ENDORSEMENT AND RECORDING

3.2.6.1 CERTIFICATE OF APPROVAL

The action of the Board in respect to any Definitive Plan shall be by vote, copies of which shall be certified and filed with the Town Clerk and sent by registered mail to the applicant. 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 original drawing of the Definitive Plan by the signatures of a majority of the Board but not until the statutory twenty (20) 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.

Final approval of the Definitive Plan does not constitute the laying out or acceptance by the Town of the streets or ways within the subdivision.

3.2.6.2 RECORDING, FILING, AND COPIES RETURNED

Within thirty (3) days after the return of an approved plan, the applicant shall cause to be recorded in the

Middlesex Southern District Registry of Deeds and, in the case of registered land, with the recorder of the Land Court, a copy of the approved Definitive Plan and accompanying covenants or agreements, if any. Following plan approval, endorsement and recording, the applicant shall provide the Board with one (1) polyester film reproducible, five (5) prints of the Definitive Plan, one (1) of which shall be certified by the Registry of Deeds as having been recorded, and one (1) certified copy of the final covenant and restrictions, noting the book, page number and date of recording for each. One (1) copy of the Definitive Plan shall be transmitted to the Building Inspector, one (1) copy to the Highway Surveyor for the Town of Shirley, and one (1) copy to the Board of Health by the Planning Board.

Failure to comply with the procedural and other requirements of these Rules and Regulations may result in rescission of the approval given hereunder by the Board. No building permits shall be issued until proof of recordation as required herein has been submitted.

3.2.7 EVIDENCE OF SATISFACTORY PERFORMANCE

Before the Board will release the interest of the Town in a performance bond or deposit (or, in the case of approval with covenants, issue a release of covenant), the applicant shall:

- a. File with the Board a certified copy of the layout plan of each street in the subdivision ("as built" (or in the case of approval of covenant, of the street or streets serving the lots for which a release is desired). Certification shall be by a Registered Professional Engineer or Land Surveyor, and shall indicate that streets, storm drains, sewers, water mains, cable T.V. facilities, bounds, monuments and their appurtenances have been constructed and inspected in accordance with said plan and the requirements of the Highway Surveyor and are accurately located as shown thereon.
- b. Obtain and submit to the Board written evidence (see Form G-1, Appendix) that the required improvements have been completed to the satisfaction of the official, and for the facilities, listed below:

the planting of any required street trees (by the Board or its designated agent);

the placing of monuments and construction of all other required improvements and the performance of all other required work (by the Board or its designated agent);

the streets and drainage in accordance with the approved Definitive Plan (by the Board or its designated agent);

the underground wiring, to include cable T.V., water mains, sanitary sewers, storm sewers, hydrants, fire ponds and fire alarm in accordance with the approved Definitive Plan (by the Board or its designated agent);

the exposure of the improvements to weather and the elements for one full calendar year from the Planning Boards final approval without damage or, if damage has occurred, it has been repaired to the satisfaction of the Board.

3.2.8 RELEASE OF PERFORMANCE GUARANTEE

Upon completion of the improvements required under Section 4, in order to obtain a release of the security for the performance of any covenant with respect to any lot, the applicant shall send by registered mail, postage pre-paid, to the Town Clerk a written statement in duplicate that the said construction or installation in connection with which such bond, deposit or covenant had been given has been completed in accordance with the requirements of said Section 4. Such statement is to contain the address of the applicant, and the Town Clerk shall forthwith furnish a copy of said statement to the Board. If the Board determines that said construction or installation has been properly completed, it shall release the interest of the Town in such bond and return the bond or the deposit to the person who furnished same, or issue a release of covenant in a form for recording. If the Board determines that said construction or installation has not been completed, it shall specify to the applicant in writing the details wherein said construction or installation fails to comply with the requirements of Section 4 and, upon failure to so specify within forty-five (45) days after the receipt by the Town Clerk of said statement, all obligations under the bond shall cease and terminate by operation of law, any deposit shall be returned and any such covenant shall become void. In the event that said forty-five (45) day period expires without such specification, or without the release and return of the bond or the return of the deposit or release of the covenant as aforesaid, the said Town Clerk shall issue a certificate to such effect, duly acknowledged, which may be recorded in the registry of Deeds.

The Board will release from such covenants only those lots for which installation of ways and services has been completed in accordance with the Rules and Regulations set forth herein. Form F, "Release of

Covenant”, may be submitted when applying for the release of a lot from a covenant.

3.2.9 REVOCATION OF APPROVAL

The Board reserves the right to revoke previously granted approval of a Definitive Plan in accordance with Section 81-W of the Subdivision Control Law. Notice of such action shall be given to the applicant, the Town Clerk, and the Middlesex Southern District Registry of Deeds, in accordance with said Section.

SECTION 4. REQUIRED IMPROVEMENTS IN SUBDIVISION: DESIGN STANDARDS AND CONSTRUCTION SPECIFICATIONS

4.0 GENERAL

4.0.1 DESIGN GUIDES

All subdivisions shall be designed and improvements made by the subdivider/developer consistent with the requirements of Section 4. Design and construction shall:

1. Reduce, to the extent reasonably possible, the following:
 - a. volume of cut and fill;
 - b. area over which existing vegetation will be disturbed, especially on land within 200 feet of a river, pond, or stream, or having a slope of more than 15%;
 - c. number of mature trees removed;
 - d. extent of waterways altered or relocated;
 - e. visual prominence of man-made elements which are not necessary for safety or orientation;
 - f. visibility of building sites from existing streets;
 - g. blockage of vistas through new development;
 - h. removal of existing stone walls;
 - i. number of driveways exiting onto existing streets or collector streets;
 - j. alteration in groundwater or surfacewater levels or chemical constituents;

- k. disturbance of important wildlife habitats, outstanding botanical features, scenic or historic environs;
 - l. soil loss or instability during and after construction.
2. Increase, to the extent reasonably possible, the following:
- a. the use of street configurations to avoid traffic on streets providing house frontages;
 - b. visual prominence of natural features of the landscape;
 - c. street layout facilitating solar orientation of houses;
 - d. use of curvilinear street patterns.
3. Be in conformity with Zoning Bylaws of the Town of Shirley, as amended and the intent of the Town's Open Space and Master Plans.

The proposed streets and ways shall conform so far as practical in width and alignment with those indicated in the Town's Zoning Bylaw, except as the same purposes may be shown, to the satisfaction of the Board, to be better served by a modification thereof in the general area of the proposed subdivision.

All lots shown on the Plan shall conform with the area, dimensions, frontage, buildable area and all other requirements contained in the Town of Shirley Zoning Bylaws.

4.0.1.1 MULTIFAMILY UNIT SUBDIVISIONS

Applicants for approval of subdivisions which will contain multifamily units should consult with the Planning Board prior to submission of such applications as to additional requirements relating to site design and layout which may be required to assure conformity with these Rules and Regulations.

4.1 ACCESS TO RESIDENTIAL SUBDIVISION

- 4.1.1 An access to any residential subdivision must be within the Town limits. Any access to a subdivision through another town requires certification from that town that the street is in accordance with plans and subdivision requirements of that town, that the bond posted is adequate, and that the access is adequate for expected traffic.

- 4.1.2 No subdivision plan shall be approved unless its street system will connect with a way qualifying to provide frontage under the Town of Shirley Zoning Bylaws. No subdivision plan potentially resulting in the creation of more than twenty (20) lots shall be approved unless the Board, following its public hearing and consultation with the Police Chief, Fire Chief, Highway Surveyor and Selectmen, determines that access will be adequate in light of the expected traffic, without reduction in the level of service or creation of a hazard.
- 4.1.3 No subdivision plan shall be approved unless its street system assures physical access to each lot without reliance on common driveways.

4.2 OPEN SPACES

- 4.2.1 Before approval of a plan, the Board may 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 be of reasonable size, but generally not less than ten (10%) percent of the area of the land to be subdivided, depending upon the location and quality of the land being set aside. The minimum area acceptable for later public acquisition shall be five (5) acres. The Board may, by appropriate endorsement on the Plan, require that no building be erected upon such park or parks without its approval for a period of three (3) years. All park areas shall have signage designating their use.
- 4.2.2 Land designated for park or playground purposes shall not include wetlands, ledge, or other land unsuitable for recreation purposes in the minimum area calculations.
- 4.2.3 Any open space, park or playground shall provide at least fifty (50) feet of continuous frontage on a street. Pedestrian ways will normally be required to provide access from each of the surrounding streets, if any, to which the open space, park, or playground has no frontage. Such parks and/or playgrounds may be required to have maintenance provided for by the covenants and agreements acceptable to the Board, until public acquisition is accomplished by the Town, but in no case longer than three (3) years.

4.3 WETLANDS PROTECTION

The Wetlands Protection Act, Section 40 of Chapter 131 of the General Law states, in part, that “no person shall remove, fill, dredge or alter any bank, beach, flat, marsh, meadow or swamp bordering...on any...creek, river, stream, pond or lake, or any land under said waters...without filing written notice of his intention to so remove, fill, dredge or alter, including such plans as may be necessary to describe such proposed activity and its effect on the environment, at least sixty (60) days prior to any such removing, filling, dredging or altering. Said notice shall be sent by certified mail to the

Conservation Commission". The Board may condition its approval of a Definitive Plan upon the issuance of an "Order of Conditions" by the Commission or the determination by the Commission of the inapplicability of the Wetlands Protection Act.

4.4 CONSTRUCTION GUIDES

- 4.4.1 All streets, street drains, catch basins and appurtenances thereto shall be installed without expense to the Town of Shirley.
- 4.4.2 All wells shall be located to prevent street drainage contamination. Under no circumstances, shall any wells be located within fifty (50) feet of any public or private way.
- 4.4.3 As each construction operation is completed, approval of it must be obtained from the Board before work may be started on the succeeding operation or operations, according to a schedule of inspections to be promulgated by the Board for the subdivision.
- 4.4.4 All construction details, materials, methods and specifications shall conform to the current requirements of the "Commonwealth of Massachusetts, Standard Specifications for Highways and Bridges, Boston, Massachusetts" and shall be under the supervision of the Board or an agent designated by the Board.
- 4.4.5 All rolling on roadways shall be done with a roller of not less than ten (10) tons. Use of water shall be as specified by the Highway Surveyor.
- 4.4.6 All right-of-way lines, all drain lines and all underground municipal services shall be laid out as to line and grade by a Registered Professional Engineer or Registered Land Surveyor.
- 4.4.7 The bottom of basement floor of buildings shall be no less than eighteen (18) inches above the historical high ground water table elevation, as determined by monitoring wells, United States Geological Survey data or other documentation deemed reliable by the Board.
- 4.4.8 There shall be no stump disposal areas.

4.5 STREETS

4.5.1 Location

- 4.5.1.1 All streets in the subdivision shall be designed so that, in the opinion of the Board, they will provide safe vehicular travel and natural drainage with no drainage pockets, and so that they are adjusted to the topography and provide the minimum number of intersections with

existing and collector streets. Due consideration shall also be given by the subdivider/developer to the attractiveness of the street layout in order to obtain the maximum livability and amenity of the subdivision.

4.5.1.2 Provision satisfactory to the Board shall be made for the proper projection of streets, or for access to adjoining property which is not yet subdivided.

4.5.1.3 Subdivisions containing more than twelve (12) lots shall have at least two (2) noncontiguous street connections with a street or streets, either existing or shown on an approved subdivision plan, for which a performance guarantee has been filed.

4.5.1.4 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.

4.5.1.5 Streets will ordinarily be requested adjacent to parks and schools to provide access to and proper policing of such areas.

4.5.2 Alignment

4.5.2.1 Street jogs with centerline offsets of less than one hundred twenty-five (125) feet should be avoided. Other intersections should be separated by not less than six hundred (600) feet on collector streets, four hundred (400) feet elsewhere.

4.5.2.2 The minimum centerline radii of curved streets shall be as follows:

Collector Streets: three hundred (300) feet

Minor Streets: one hundred fifty (150) feet

4.5.2.3 All reverse curves on collector streets shall be separated by a tangent at least one hundred (100) feet long.

4.5.2.4 Streets shall be laid out so as to intersect as nearly possible at right angles. No street shall intersect any other street at less than sixty (60) degrees.

4.5.2.5 Property lines at street intersections shall be rounded or cut back to provide for a curb radius of not less than twenty-five (25) feet, except fifteen (15) feet at intersections of minor streets.

4.5.3 Widths

The minimum width of streets shall be as follows:

Collector Streets: sixty (6) feet right of way
and pavement of twenty-eight (28) feet

Minor Streets: fifty (5) feet right of way
And pavement of twenty-four (24) feet

4.5.4 Grades

4.5.4.1 The center line grade for any street shall not be less than seventy-five hundredths (0.75) of one (1) percent.

4.5.4.2 The maximum centerline grades shall be as follows:

Collector Streets: seven (7) percent
Minor Streets: ten (10) percent

4.5.4.3 All changes in grade exceeding one (1) percent shall be connected by vertical curves of sufficient length to afford the following safe stopping sight distances.

Collector Streets: 275 feet
Minor Streets: 175 feet

4.5.4.4 On any street where the grade exceeds six (6%) percent on the approach to an intersection, a leveling area with a slope of not more than three (3%) percent shall be provided for a distance of a least thirty (30) feet from the nearest edge of the intersection traveled way.

4.5.4.5 Proposed centerline grade shall not be more than seven (7) feet above or below existing centerline grade unless specifically authorized by the Board in unusual topographic circumstances.

4.5.4.6 Street grades shall be designed in relation to existing grades such that the volume of cuts and fills made within the right-of-way approximately balance, except to offset peat, boulders, or other unusable material to be removed.

4.5.5 Dead-end Streets

4.5.5.1 A dead-end street, whether temporary or permanent, shall not serve more than twelve (12) lots nor have a

centerline length longer than one thousand (1,000) feet from the sideline of the intersecting street to the dead-end street's most distant point unless, in the opinion of the Board, a greater length is necessitated by topography or other local conditions, or is an integral part of an approved cluster housing development under Section 4.2 of the Shirley Zoning Bylaw.

4.5.5.2 Dead-end streets shall be provided at the closed end with a turn-around having an outside street line diameter of at least 135 feet and a radius at the outer edge of traveled way of fifty-seven (57) feet. Alternative layouts, such as a "tee", may be permitted by the Board if designed for a vehicle of sixty (6) feet in length, sixteen (16) feet in width, and having an outside turning radius of fifty-seven (57) feet.

4.5.5.3 A dead-end street shall not have a grade of greater than two (2%) percent for the last one hundred (100) feet at the closed end.

4.5.5.4 Temporary dead-ends shall similarly provide for a turn-around, which may be located in part on easements over lots, so long as contractual assurance is provided that upon extension of the street the terminated turn-around will be removed and replaced with loam and appropriate plantings.

4.5.5.5 Cul-de-sac islands will be vegetated with appropriate plantings unless otherwise required by the Planning Board.

4.5.6 Roadway Construction

4.5.6.1 Each street shall be constructed on the centerline of the right-of-way unless otherwise authorized by the Board.

4.5.6.2 Clearing:

The roadway shall be cleared to the entire width of the right-of-way. A greater width may be required at corners and on the inside of curves for visibility.

4.5.6.3 Preparation of the roadway:

- a. All materials shall be removed for the full length and width of the right-of-way to a depth of at least fifteen (15) inches below the finished surface as shown on the profile plan; provided, however, that

if the soil is soft and spongy, or contains undesirable material, such as clay, sand pockets, tree stumps, stones over six (6) inches in diameter, or any other material detrimental to the subgrade, a deeper excavation, below the subgrade shall be made, as directed by the Board or its designated agent.

- b. At this point of preparation, all pipes shall be laid in accordance with appropriate specifications.
- c. The excavated area below the subgrade shall be filled to subgrade with good, clean bank gravel or other well compacted material satisfactory to the Board or its designated agent.
- d. The entire roadway then shall be rolled, forming the subgrade with a 3/8" per foot crown.

4.5.6.4 Completion of roadways:

- a. An inspection must be made of the subgrade by the Board or its agent before any foundation gravel is spread. All underground utilities, such as telephone, electricity, and cable T.V. shall be installed and likewise inspected prior to placing of roadway surface.
- b. The gravel base shall be spread in two layers per SSH&B Section 401.60 – Gravel Subbase. Before the gravel is spread, the roadbed shall be shaped to a true surface conforming to the proposed cross-section of the road. The bottom 8-inch layer shall be spread and rolled (minimum 10 ton roller) with a gravel meeting SSH&B M.1.03.0 type A (no stones over 6 inches in diameter). The top 4 inch layer shall be spread and rolled with a gravel meeting SSH&B M.1.03.0 type B (no stones over 3 inches in diameter).
- c. The roadway shall have a crown of 3/8" per foot and be paved with SSH&B Section 460 – class I bituminous pavement. The paving shall consist of a binder course 2 1/2" compacted measure followed by a finished course 1 1/2" compacted measure (minimum 10 ton roller).

4.5.6.5 Shoulders:

Roadways shall have shoulders with minimum widths as follows:

Collector	five (5 feet)
Minor	three (3) feet

Shoulders shall pitch at 3/8" to the foot towards the curb or swale. This area shall have a 9" gravel foundation, and be loamed, graded with at least 6" of loam or other good topsoil conducive to the growing of grass, rolled and seeded with lawn grass seed.

4.5.6.6 Wall or Slope Support:

Where the grade of a street or way is above or below the grade of the adjacent land, walls or slopes shall be constructed in conformity with the approval of the Highway Surveyor of the Town of Shirley and, in any event, sufficient in the opinion of the Board to support the way or the adjacent land, as the case may be.

4.6 STORM WATER MANAGEMENT:

4.6.1 General approach:

Storm drains, culverts, swales, detention basins, and related facilities shall be designed to permit the unimpeded flow of all natural water courses, to ensure adequate drainage at all low points along streets, to control erosion, and to intercept storm water run-off along streets at intervals reasonably related to the extent and grade of the area being drained. Where determined to be appropriate by the Board, storm water shall be carried on the ground surface and recharged ("open system") rather than piped to surface water ("closed system"). Peak stream flows and run-off at the boundaries of the development in a twenty-five (25) year frequency storm shall be no higher following development than prior to development, unless an increase is authorized by the Board, following consultation with the Conservation Commission and consideration of the ability of receiving wetlands or waterbodies to absorb the increase and the consequences of providing detention capacity.

4.6.2 Design Basis. Facility Design shall be as follows:

Storm sewers, swales – 10-year storm
Detention basins – 25-year storm
Culverts, other stream crossings – 50-year storm

All tributary areas shall be assumed to be fully developed in accordance with the Zoning Bylaws unless publicly owned or deed restricted. Calculation shall normally be based on the Soil Conservation Service Modified Soil Cover

Complex Method, except for drainage areas whose small size or soil type suggest use of the Rational Method, instead. Water velocities in pipes and paved gutters shall be between two (2) and ten (10) feet per second, and not more than five (5) feet per second on unpaved surface.

4.6.3 Storm Sewers

All drain pipes shall be at least twelve (12) inches inside diameter, made of reinforced concrete, conforming to Massachusetts Highway Department Specifications for Class II concrete pipe, or such higher class as may be required by depth of cover, which shall not be less than twenty four (24) inches. Also, POLYETHYLENE PIPE ADS-N12 ULTRA SOLID or PERFORATED WITH/BELL, may be used if approved by the Highway Surveyor and the Planning Board. Materials, dimensions, physical properties and fabrication shall be in accordance with AASHTO M 294. No catch basins shall serve as manholes.

4.6.4 Structures

Except where drainage swales are used, catch basins will be required on both sides of the roadway on continuous grade at intervals of not more than 300 feet. Any catch basins and manholes used shall be at least six (6) feet deep and four (4) feet diameter (inside measurement), with a thirty (30) inch or greater sump below pipe invert and shall be constructed of concrete blocks or precast concrete units, plastered on the outside. Manhole covers and grates shall be in conformity with Massachusetts DPW Specification 201, designed and placed so as to cause no hazard to pedestrians or bicyclists.

4.6.5 Swales

Drainage swales shall have cross-sectional areas adequate to carry a 10 year storm, and be treated as follows:

<u>Slopes</u>	<u>Treatment</u>
0.75% - 4%	6" of loam seeded
4% - 10%	6" min. dimension of angular stones for a water depth of 1 foot, with a 12" gravel subbase (SSH&B m 1.03.0 Type A)

4.6.6 Waterways

Open brooks or tributary ditches which are to be altered shall be shaped to a cross section and gradient, and provided with stream bottom hardening, as approved by the Conservation Commission in accordance with Massachusetts General Laws, Chapter 131, Section 40, all acceptable to the Board. Safety fencing may be required where

important because of slope, bank instability, stream depth or flow rate, or other reasons.

4.6.7 Connections

Proper connections shall be made with any existing drains in adjacent streets or easements which prove adequate to accommodate the drainage flow from the subdivision. In the absence of such facilities, or the inadequacy of the same, it shall be the responsibility of the subdivider/developer to extend drains from the subdivision as required to properly dispose of all drainage from the subdivision in a manner determined to be proper by the Board, and to secure for the Town any necessary drainage rights.

4.6.8 Excavations

No excavations for storm sewers, catch basins, manholes, or other related facilities shall be backfilled until inspected.

4.7 FLOOD PLAIN

All subdivision proposals and other proposed new development shall be reviewed to determine whether such proposals will be reasonably safe from flooding. If any part of a subdivision proposal or other new development is located within the Flood Plain District no established under the Zoning Bylaws, or the 100 year flood boundaries as established by the Shirley Flood Insurance Rate Map (FIRM), dated July 5, 1983, it shall be reviewed to assure that:

- a. the proposal is in compliance with the Zoning Bylaws;
- b. the proposal is designed consistent with the need to minimize flood damage, and;
- c. all public utilities and facilities, such as gas, electrical and water systems shall be located and constructed to minimize or eliminate flood damage, and;
- d. adequate drainage systems shall be provided to reduce exposure to flood hazards, and;
- e. base flood elevation (the level of the 100 year flood) data shall be provided for proposals greater than five (5) acres for that portion within the Flood Plain District, if any.

4.8 MUNICIPAL SERVICES AND UTILITIES

4.8.1 Water shall be supplied to each lot in a subdivision. The applicant shall consult with the Shirley Water District to determine the feasibility

of water being supplied to the subdivision. In the event that such service is provided, the supply system piping and appurtenances shall be designed according to the standards and specifications of the Shirley Water District. Where connection to a public system is not feasible, evidence shall be submitted to satisfy the Board of Health requirement that an adequate and suitable supply of potable water is available.

4.8.2 Electricity, telephone and cable television service shall be provided to each lot. All electrical, telephone, cable television and other utility wires shall be placed below ground in every subdivision, unless the Board determines that such placement is not feasible or is not in the best interest of the Town of Shirley. The construction standards for electrical service lines and appurtenances, including street lighting facilities, shall be designed according to specifications of Massachusetts public electric, telephone, and cable television supplier.

4.8.3 Provision shall be made for fire protection to the buildings in the subdivision. The applicant shall discuss plans with the Chief of the Town of Shirley Fire Department and reach an agreement for the method of providing fire protection service. In the event that fire hydrants are used, and fire alarm boxes are required, these shall be provided as specified by the Fire Department. A subdivision plans shall be approved only upon presentation of evidence to the Board, subject to the advice of the Fire Chief, that adequate provisions for fire fighting have been made.

4.8.4 Lighting

Streetlights, fifteen (15) feet in height, shall be placed at all roadway intersections within the subdivision and at all entrances to the subdivision from existing streets. If the distance from the intersection of an existing street to the first house on a subdivision roadway is more than 150 feet, one streetlight for each 150 feet, or portion thereof, of such distance shall be placed along the subdivision roadway. A lamppost controlled by the home owner, shall be eight (8) feet in height, shall be placed at each driveway entrance and shall be located within twenty (2) feet of the intersection of the driveway and the subdivision roadway. The design of the streetlights and lampposts shall be approved by the Planning Board.

4.9 OTHER IMPROVEMENTS

4.9.1 Sidewalks

4.9.1.1 Required locations:

Sidewalks within the street right-of-way shall be provided as follows:

Collector streets – each side

Minor streets – each side

In addition, public off-street walkways, bikeways, or bridle paths may be required by the Board to provide circulation or access to schools, playgrounds, parks, shopping, transportation, open space, or community facilities, or to break up long blocks, or for such other reason as the Board may determine. Such ways may or may not be part of normal sidewalk provisions, but they shall not be part of any lot in the subdivision.

4.9.1.2 Width and alignment:

Sidewalk pavement width shall be five (5) feet, except at intersections, shall be separated from the traveled way by not less than the required shoulder width.

4.9.1.3 Construction:

Sidewalks shall have a foundation of eight (8) inches or more of compacted gravel. The paving shall consist of a binder course 1 ½" compacted measure, followed by a finished course 1 ½" compacted measure applied with sidewalk spreader and rolled with minimum 1-ton roller, and shall be uniform elevation from beginning to end, six (6") inches above the finished pavement of the roadway.

4.9.2 Grass Plots and Slopes

Embankments outside the shoulders and swales shall be evenly graded and pitched at a rate not steeper than two to one (2:1) in cut and three to one (3:1) in fill. The Board may require such banks and all other disturbed areas adjacent to the traveled way to be loamed and seeded to grass. However, it is suggested that consideration be given to the surrounding growth and terrain. Roadsides should be made to blend with the woods or natural surroundings that exist, and plantings in such areas should be chosen accordingly.

4.9.3 Street Trees

Street trees not less than twelve (12) feet in height and of a species approved by the Tree Warden shall be planted on each side of every street in the subdivision, wherever, in the opinion of the Tree Warden, existing woodlands or suitable individual trees are not retained. Trees shall be located outside the exterior street lines, and at such distance

therefrom, and at such spacing as the Tree Warden shall specify, in accordance with the most recent general practice of the Town, in planting trees on private property along public ways.

4.9.4 Curbing

Both sides of all roads shall have a sloped granite curbing with 6 inches exposed at finish grade. This curbing will be installed after the binder course has been placed. All granite curbing shall be as addressed in section 500 (curbing and edging) Massachusetts Highway Department Standard Specifications for Highway and Bridges. The following sections shall be used in all installations: 501.20 General Description, 501.40 Materials, 501.60, 501.61, 501.62 Construction Methods. Where open swale drainage is employed, curbs may be waived.

4.9.5 Driveway Entrances

In order that surface water from roadways shall not drain onto individual lots, driveway entrances shall be constructed so that they slope towards the roadway for a minimum distance of four (4) feet at not less than one (1) inch per foot.

4.9.6 Monuments

4.9.6.1 Street lines shall have bounds placed at all angle points, at the beginning and end of all curves, and every 1,000 feet on straight lines. Such bounds shall be of sound granite, not less than three (3) feet long and not less than five (5) inches square, with a dressed top and ½ inch drill hole. A three (3) foot long iron pin shall be installed on the street side of the bound.

4.9.6.2 Four major corners of each lot shall be marked with bounds. Where not coincident with the above, such bounds shall be concrete, not less than three (3) feet long and not less than three (3) inches square, with a ½" drill hole.

4.9.6.3 Monuments shall be installed only after all construction which would disturb them is completed, and shall, have their top flush with final grade surface.

4.9.6.4 The placement and accurate location of these monuments shall be certified by a Registered Land Surveyor.

4.9.7 Street Signs

Street signs shall be provided and installed as directed by the Board and approved by the Highway Surveyor.

4.9.7.1 Street Names

Proposed streets which are obviously in alignment with other streets already existing and named shall bear the names of such existing streets. No other proposed street shall duplicate the name of an existing street and, all proposed street names shall be approved by the Planning Board.

4.9.8 Cleaning Up

The entire area must be cleaned up so as to leave a neat and orderly appearance free from debris and other objectionable materials and without unfilled holes or other artificially created hazards. Undeveloped lots in the subdivision must be free of debris before the Planning Board will recommend acceptance of the streets as public ways.

4.9.9 Easements

4.9.9.1 Easements for fire ponds and utilities across lots or centered on rear or side lot lines shall be provided where necessary and shall be at least twenty (20) feet wide.

4.9.9.2 Where a subdivision is traversed by a water course, drainage way, channel or stream, the Board may require that there be provided a storm water easement or drainage right-of-way of adequate width to conform substantially to the lines of such water courses, drainage way, channel or stream, and to provide for the free flow of water in its natural course, or for the construction of other necessary purposes.

4.10 INDUSTRIAL SUBDIVISIONS

4.10.1 Industrial subdivisions shall comply with all applicable requirements of the Subdivision Rules and Regulations except as noted in this section.

4.10.2 All streets shall be constructed as collector streets and all appropriate design standards shall apply.

4.10.3 Curb radii shall not be less than fifty (50) feet.

4.10.4 Roadway grades shall not exceed 6.0 percent.

4.10.5 Looping streets and second exits should be provided to avoid cul-de-sac type turn-arounds, wherever possible.

SECTION 5. ADMINISTRATION

5.0 INSPECTIONS

For the protection of the Town and future residents of the subdivision, a series of inspections during the course of construction is required to ensure compliance with the approved Definitive Plan and these Rules and Regulations.

5.0.1 Inspection by the Board or its Representative

No water main, storm drain, catch basin, utility installation, road sub-grade or foundation, or any other item of work designated for inspection shall be backfilled or paved over until inspected by the Board or its representatives.

5.0.2 Inspection Requests

Inspections shall be requested by the subdivider at least two (2) full working days in advance by notice to the Board and its duly authorized representative.

5.0.3 Inspections Required

The Planning Board shall be contacted regarding all inspections and will then contact whoever is to make the inspections.

5.0.3.1 Roadbed inspections: following excavating of the roadbed, but prior to any backfilling.

5.0.3.2 Drainage inspections: following installation of drain pipe, culverts, catch basins and all related construction, but prior to backfilling.

5.0.3.3 Underground utilities inspections: following laying of electric, telephone, cable T.V. and fire alarm cable in the roadway and to individual dwellings, but prior to backfilling.

5.0.3.4 Finished gravel foundation inspections: following application, grading and compaction of gravel foundation.

5.0.3.5 Pavement inspections: Notice shall be given of the time of paving in order that inspection during, and upon completion of, paving may be made.

5.0.3.6 Final inspection: following completion of roads, permanent bench marks, curbing, walkways, grading, seeding and clean-up.

5.1 VARIATIONS

Strict compliance with the requirements of these Rules and Regulations may be waived when, in the judgment of the Board, such action is in the public interest and not inconsistent with the Subdivision Control Law.

5.2 REFERENCE

For matters not covered by these Rules and Regulations, reference is made to Sections 81K to 81GG, inclusive, of Chapter 41 of the Massachusetts General Laws, as amended.

5.3 INVALIDATION BY STATE LAW

Any part of these Rules and Regulations subsequently invalidated by a new state law or modification of an existing state law shall automatically be brought into conformity with the new or amended law, and shall be deemed to be effective immediately, without recourse to a public hearing and the customary procedures for amendment or repeal of such regulation.

5.4 SEVERABILITY

If any section, paragraph, sentence, clause or provision of these Rules and Regulations shall be adjudged not valid, the adjudication shall apply only to the material so adjudged and the remainder of these Rules and Regulations shall be deemed to remain valid and effective.

5.5 AMENDMENTS

These Rules and Regulations or any portion thereof may be amended, supplemented or repealed from time to time by the Board after a public hearing, on its own motion or by petition.

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