RULES AND REGULATIONS
GOVERNING THE SUBDIVISION OF
LAND

TOWN OF HATFIELD,
MASSACHUSETTS

Adopted at a meeting of the Planning Board of the Town of Hatfield on
January 21, 2009
after a public hearing held on November 5, 2008.

Recorded with the Hampshire County Register of Deeds
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SECTION 1.0 AUTHORITY AND PURPOSE

1.1 Statutory Authority
Under the authority vested in the Planning Board of the Town of Hatfield by Section 81-Q of Chapter 41 of the General Laws, said Board hereby adopts these rules and regulations governing the subdivision of land in the Town of Hatfield.

1.2 Purpose
These Rules and Regulations Governing the Subdivision of Land in the Town of Hatfield have been enacted for the purpose of protecting the safety, convenience, and welfare of the inhabitants of Hatfield by regulating the laying out and construction of ways in subdivisions providing access to the several lots therein, but which have not become public ways, and ensuring sanitary conditions in subdivisions and in proper cases, parks and open areas. The powers of the Planning Board and the Board of Appeals under the Subdivision Control Laws shall be exercised with due regard for:

- The provision of adequate access to all 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 adjacent public ways;
- For securing safety in the case of fire, flood, panic and other emergencies;
- For ensuring compliance with the Zoning By-Laws of the Town of Hatfield;
- For securing adequate provisions for water, sewerage, drainage, underground utility services, street lighting, fire and police 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 of Hatfield and with the ways in neighboring subdivisions.
SECTION 2.0    GENERAL PROVISIONS

2.1   Definitions

Abutter: All those property owners whose land abuts the proposed subdivision or land described in a plan believed not to require approval. It shall also mean those property owners directly across a street or road from, or within 300 feet of the property boundary of, the subject subdivision or land.

Applicant: The owner of land proposed to be subdivided or its representative who shall have express written authority to act on behalf of the owner. Consent shall be required from the legal owner of the premises.

Approval Not Required (ANR): A subdivision plan showing lots and ways that can be recorded without the approval, but not without the endorsement, of the Planning Board if:

1. The lots shown on such plan front on one of the three types of ways, as specified in MGL Chapter 41, Section 81L:
   a. a way accepted by the Town of Hatfield or certified by the Town Clerk as used and maintained as a public way;
   b. A way shown on an approved and endorsed subdivision plan;
   c. A way in existence when the Subdivision Control Law became effective in Hatfield (DATE) and 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 therein

2. The lots shown on such plan must meet the minimum frontage requirements for the Town of Hatfield; and,

3. A Planning Board’s determination that the vital access to such lots, as contemplated by MGL Chapter 41, Section 81M, otherwise exists.

Board: The Hatfield Planning Board.

Caliper: Diameter of a tree trunk in inches measured six inches above the ground for trees up to and including four inch diameter, and 12 inches above the ground for larger trees.
Certified by (or Endorsed by) the Planning Board: Bearing a certification or endorsement signed by a majority of the members of the Planning Board or any other person authorized by the Board to certify or endorse 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 Board. This is applied to a plan or other instrument required or authorized to be recorded by the Subdivision Control Law.

Collector street: A street which receives and distributes traffic from and to various sub-areas within a given region, and receives traffic from a given residential neighborhood or industrial area and carries it to an arterial highway. These roads run through developed areas or connect concentrations of development and carry significant volumes (Average Daily Traffic (ADT) ranges typically 1,500 to 3,500).

Consultants or Consulting Services: Includes but is not limited to: architects, biologists and environmental experts, certified arborist, chemists, engineers, geologists, landscape architects, planners, lawyers, sanitarians, and surveyors.

DBH (Diameter at Breast Height): The diameter in inches of the tree trunk (or for multiple trunk trees, the aggregate diameters of the multiple trunks) measured 4 ½ feet from the existing grade at the base of the tree.

Dripline: An area encircling the base of a tree which is delineated by a vertical line extending from the outer limit of a tree’s branch tips down to the ground.

Easement: A right in land acquired by public authority or other person to use or control property for utility or other purpose.

Engineer: Person registered by the Commonwealth of Massachusetts to perform professional civil engineering services.

Essential Root Zone: An area located on the ground between the tree trunk and 10 feet beyond the dripline of the tree which is required for protection of a tree’s root system.


Local Street: A street (having an Average Daily Traffic (ADT) not to exceed 1500) which primarily provides access to and serves adjacent land uses.

Lot: An area of land in one ownership, with definite boundaries, used or available for use, as the site of one or more buildings.
**Open Space:** Property within a subdivision designated to be deeded by the developer to the town or other approved agency, or to be maintained by the developer or owner in an undeveloped state in a manner approved by the Planning Board. Such open space is to be used for passive or active recreation, agriculture, forestry, rare and endangered species habitat, natural or scenic vistas, unique natural or cultural features, or greenways. Such open space shall be retained in substantially a natural, wild or open condition, or in a landscaped condition in such a manner as to allow to a significant extent the preservation of wildlife or other natural resources. Open space shall be contiguous areas containing a high ratio of interior area to edge area. Open space shall contain to the greatest extent possible soils uniquely suited to agricultural use and that further create greenway corridors to establish linkages in landscape. Such areas shall be of adequate size and configuration to accommodate the intended use, and shall not include narrow or irregular pieces of land which are remnants from the layout of lots, streets, or drainage structures. Open space does not include areas designated for sediment control, erosion control, or storm water control, nor does it include wetland resource areas. Such areas are considered part of the subdivision structure, and are not intended to be for recreation.

**Owner:** The owner of record as shown by the records in Hampshire County Registry of Deeds or Land Court.

**Performance Guarantee:** A guarantee, in the form of a surety bond, cash, savings passbook, negotiable securities or lender’s agreement, by the developer to be used to complete subdivision improvements if the developer does not complete the improvements as promised, as required by MGL c. 41, Section 81U.

**Plan, Definitive:** A proposed plan of a subdivision submitted by the applicant to be recorded in the Hampshire County Registry of Deeds or Land Court when approved by the Planning Board.

**Plan, Final:** A proposed final, definitive plan showing not more than one building - to be used for dwelling purposes - per building lot, to be approved by the Planning Board as a prerequisite to obtaining building permits.

**Plan, Preliminary:** A plan, described in these regulations, indicating the proposed manner or layout of the subdivision to be submitted to the Planning Board for approval. The preliminary plan can serve as the basis of the definitive plan.

**Subdivision:** The division of a tract of land into two or more lots and shall include re-subdivision, and, when appropriate to the context, shall relate to the process of subdivision or 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) a public way, or (b) a way shown on a plan therefore approved in accordance with the subdivision control law, or (c) a way in existence when the subdivision control law became effective in the city or town in which the land lies, 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 by-law, if any, of said city or town for erection of a building on such lot, and if no distance is so required, such frontage shall be of at least twenty feet. Conveyances or other instruments adding to, taking away from, or changing the size and shape of, lots 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 when the subdivision control law went into effect in the city or town in which the land lies into separate lots on each of which one of such buildings remains standing, shall not constitute a subdivision. (Section 81-L of Chapter 41, G.L.)

**Surveyor:** Person registered by the Commonwealth of Massachusetts to perform professional land surveying services.

**Type I Subdivision:** A subdivision for residential purposes.

**Type II Subdivision:** A subdivision for business or industrial purposes.

**Way:** A right-of-way or means of access to a lot. A public way is a way which has been accepted by, and the land owned by, the Town of Hatfield or by other means created as a public street. Any other way (private way) is a way over land which is owned by a private party, but which is set forth by deed covenant, deed description, or other means as a private way.

### 2.2 Approval of Definitive Plan 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 utilities and municipal services therein, unless and until a Definitive Plan of such subdivision has been submitted to and approved by the Board as hereinafter provided, and subsequently recorded at the Hampshire County Registry of Deeds and, in the case of registered land, with the recorder of the Land Court.
2.3 Zoning
Subdivisions shall meet the requirements pertaining to lot size, frontage, and all other requirements under existing zoning laws. No subdivision rules can dictate the size, shape, width, frontage or use of lots except that they shall be in compliance with all applicable zoning requirements.

2.4 Relationship to Other Bylaws and Ordinances
Whenever these Rules and Regulations made under the authority hereof differ from those prescribed by any local Bylaw or regulations, the provision which imposes the greater restriction or the stricter standard shall govern.

2.5 One Dwelling Per 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, without the consent of the Board, and 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.

2.6 Reference
For matters not covered by these rules and regulations, reference is made to Section 81-K to 81-GG, inclusive, of Chapter 41 of the General Laws.

2.7 Waivers
Approval of a subdivision plan, regardless of what is shown on the plan, does not relieve a project developer from complying with the Subdivision Rules and Regulations except as specifically provided for in any Planning Board issued waiver of those Rules and Regulations.

The Planning Board may, in special and appropriate cases, waive strict compliance with such portions of these Rules and Regulations, as provided for in M.G.L. Chapter 41, Section 81-R, where such action is in the public interest and not inconsistent with the purpose and intent of the Subdivision Control Law.

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. 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.

2.8 Amendments

These rules and regulations or any portion thereof may be amended from time to time in accordance with MGL c. 41, Section 81Q of the Subdivision Control Law.
SECTION 3.0 PLAN BELIEVED NOT TO REQUIRE APPROVAL (ANR)

3.1 Submission to the Planning Board for Determination

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 his plan does not require approval under the Subdivision Control Law may submit his plan and application (Form A) to the Planning Board for determination.

3.2 Submission Requirements

The applicant shall submit the following to the Planning Board:

1. The original mylar drawing no larger than 24” x 36” and seven (7) prints of the plan

2. Two (2) copies of application Form A (see Section 9.0), signed by the applicant and providing all required information

3. The appropriate filing fee to cover the cost of handling reviews, advertising, and public meeting expenses (See Section 8.0 for Fees)

4. All supporting evidence necessary to show that the plan does not require approval by the Board

5. Electronic copies of said plan which meet the current version of the “MassGIS Standard for Digital Plan Submission to Municipalities” meeting the requirements for Level I submission standards. Electronic copies must be submitted on a CD-ROM and must be accompanied by the completed checklist required in the MassGIS standard.

Applicant shall file an ANR plan either by delivery at a regular or special meeting of said Board or by delivery of registered mail, postage paid, in care of the Planning Board. If the notice is given by delivery, the Town Clerk, shall, if requested, give a written receipt thereof. In either case, written notice (a copy of Form A) shall be filed with the Town Clerk stating the date of submission for such determination. If the notice is given by delivery, the Town Clerk shall, if requested, give a written receipt thereof.
Receipt by the Planning Board, or date of mailing of such notice, plans, and necessary documentation as may be required in these Rules and Regulations shall constitute the effective day of submission.

If in the judgement of the Planning Board, consulting services are necessary and appropriate for the review of an application, the applicant shall, prior to a determination on the Plan Believed Not to Require Approval by the Board, pay the costs incurred by the Town for the full cost of such services. This Project Review Fee is enabled by Mass G.L. Chapter 44, Section 53G. All such consultants shall be selected by the Board. Payment shall be by certified check, personal check, or money order made payable to the “Town of Hatfield, Massachusetts”.

3.3 Plan Contents

The plan shall be prepared by a Massachusetts Registered Civil Engineer and/or Massachusetts Registered Land Surveyor, shall be clearly and legibly drawn with waterproof ink upon mylar at a scale not smaller than one (1) inch equals forty (40) feet or such scale that the Planning Board may accept, with the sheet size not exceeding thirty-six (36) inches by twenty-four (24) inches, and shall contain the following information:

1. True North arrow, date, scale, legend, locus, and title, “Subdivision Approval Not Required”.

2. The names and addresses of the owner/s of record at the time of submission of the application, the applicant, and the Civil Engineer and/or Land Surveyor (including the official seal).

3. Locations, names, lines and widths of all existing streets and any common or public areas.

4. Location and dimensions of all existing structures on the proposed site.

5. Location, dimensions and purpose of all easements, both existing and proposed, within and adjacent to the land in question.

6. The plan shall show boundary lines, dimensions of all subject lots, sites of divisions, lot areas (in acres), with all lots designated numerically and in sequences.

7. Location of all monuments properly identified as to whether existing or proposed.
8. Frontage dimensions of all lots created and the dimensions of any frontage remaining on the original subdivided parcels, including the area of any subdivided parcels with a structure.

9. Suitable space to record the action of the Planning Board and the signatures of members.

10. Book and page number from the Hampshire County Registry of Deeds.

11. A notation reading “Endorsement of this Plan does not certify compliance with the zoning required for a building lot.”

3.4 Endorsements

1. If the Planning Board determines that the plan does not require approval, it shall be without a public hearing and without unnecessary delay endorse on the plan the words “Approval under the Subdivision Control Law Not Required”, with the appropriate name(s) of the Planning Board member(s) signed thereto.

2. The Planning Board may add to such endorsement a statement of the reason approval is not required. The plan will be returned to the applicant, and the Planning Board shall notify the Town Clerk of its action.

3. If the Planning Board determines that the plan does not require approval under the Subdivision Control Law, it will so inform the applicant and return the plan. The Planning Board will also notify the Town Clerk of its action.

4. If the Planning Board determines that in its opinion the plan requires approval under the Subdivision Control Law, it shall, within twenty-one (21) days of submission give written notice of its determination to the Town Clerk and applicant and return the plan to the applicant.

5. If the Planning Board fails to act upon a plan submitted under this section within 21 days after its submission, it shall be deemed to have determined that approval under the Subdivision Control Law is not required.

6. One print of the endorsed plans shall be filed by the Planning Board with each of the following:
   1. Town Clerk
   2. Board of Assessors
SECTION 4.0    PROCEDURE FOR THE SUBMISSION AND APPROVAL OF PLANS

4.1 Pre-Submission Review

Before preparation of a preliminary (or definitive) plan, it is strongly recommended that the applicant submit a sketch plan of the proposed subdivision to the Planning Board and consult with the Board informally regarding procedures, design standards and required improvements in order to save time and avoid costly mistakes.

Any person engaged in the process of submitting a subdivision to the Planning Board is strongly recommended, but not required. A typical sketch plan will include the following:

1. **Existing Resources / Site Analysis Map**: A map which identifies, locates, and describes noteworthy features to be designed around through sensitive subdivision layouts, such as vegetation, wetlands, steep slopes, farmland soils, historic or cultural features, threatened or endangered species, unusual geological formations, and scenic views or viewsheds.

2. **Voluntary Sketch Plan**: A simple and inexpensive drawing prepared by a professional landscape architect, architect, planner, site designer or engineer, which illustrates conceptual layouts of house lots, streets, conservation areas and other improvements. Ideally, this is based on the Existing Resources/Site Analysis Map and reflects comments received from Town officials.

4.2 Preliminary Plan

**A. General**

A Preliminary Plan of a residential subdivision may be submitted to the Planning Board and to the Board of Health for discussion and tentative approval, modification, or disapproval by each board. For Type II subdivisions (non-residential), the Preliminary Plan is required. The submission of such a Preliminary Plan will enable the applicant, the Planning Board, the Board of Health, and 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 each case. A properly executed application Form B shall be filed with the Preliminary Plan submitted to the Planning Board.
B. Procedure

The applicant may submit a Preliminary Plan to the Planning Board either by delivery at a regular or special meeting of said Board, or by delivery of registered mail, postage prepaid, in care of the Hatfield Planning Board. In either case, a written notice (a copy of Form B) shall be filed with the Town Clerk stating the date of submission for such tentative approval of a Preliminary Plan. The notice to the Town Clerk may be any of the types of delivery as stated for the Planning Board and the Town Clerk shall give a written receipt thereof.

Receipt by the Hatfield Planning Board, of application, plans, and documentation as may be required in these Rules and Regulations shall constitute the effective date of submission of a Preliminary Plan.

Any person who submits a Preliminary Plan of a subdivision to the Planning Board for approval shall file with the Board the following:

1. Eight (8) copies of the Preliminary Plan

2. Application Form B (see Section 9.0), signed by the applicant and providing all information requested

3. A filing fee in accordance with the Fee Schedule (see Section 8.0 for Fees). The filing fee shall be in the form of a certified check or money order made payable to the Town of Hatfield, Massachusetts

4. A copy of Form D and receipts showing that the applicant mailed, by certified mail, a notice of the proposed subdivision containing a locus map of the project to every abutter within 300 feet of the proposed subdivision.

5. If in the judgement of the Planning Board, consulting services are necessary and appropriate for the review of an application, the applicant shall, prior to a determination on the Preliminary Plan by the Board, reimburse the Town for the full cost of such services. This Project Review Fee is enabled by Mass G.L. Chapter 44, Section 53G. All such consultants shall be selected by the Board. Reimbursement shall be by certified check, or money order made payable to the “Town of Hatfield, Massachusetts”.

C. Contents

For residential subdivisions, when a developer is not proposing an Open Space Development, then the Preliminary Plan submission shall include at least two (2) alternative concepts for developing the parcel(s). Said alternative concepts shall include
at least: one concept showing the parcel developed in accordance with the Open Space Development requirements (Section 6.2 of the Hatfield Zoning By-law).

1. The subdivision name, boundaries, north point, date, scale, legend, and the title “Preliminary Plan.”

2. The names and addresses of the record owner and the applicant and the names, addresses, and professional seals of the designer, engineer, and land surveyor.

3. Names and plan location of all abutters within 200’ of the subdivision, as determined from the most recent tax list.

4. The existing and proposed lines of streets, ways, easement, and any public areas within the subdivision in a general manner.

5. The proposed system of drainage, including adjacent existing natural waterways, and all water bodies and wetlands, including those within 200’ of the subdivision.

6. The approximate boundary lines of proposed lots, with approximate areas and dimensions;

7. The names, approximate location, and widths of adjacent streets.

8. The topography of the land in a general manner. Major site features, such as existing stone walls, fences, buildings, large trees, rock ridges and ledges, swamps, historic features and wooded areas.

9. A locus plan showing the relationship of the subdivision to the surrounding area and roadways at a scale of 1”=600’.

10. The applicant shall request, in writing to the Planning Board, any proposed waiver(s) of a requirement, rule or regulation the applicant may require.

D. Approval of Preliminary Plan

After submission, the Preliminary Plan will be reviewed by the Planning Board, Board of Health, the Conservation Commission, the Department of Public Works, and other Town Boards and departments to determine whether it is in compliance with the design standards as set forth in these Rules and Regulations and with those additional requirements of other Town Boards and departments.
Within forty-five (45) days after submission of the Preliminary Plan, both the Planning Board and Board of Health shall approve, or approve with modifications suggested by the Board or agreed upon by the applicant, or disapprove said Preliminary Plan, and in the case of disapproval, the Board shall state in detail the reasons for its disapproval.

The Planning Board shall file a certificate of its action with the Town Clerk, and shall send a notice of its action by certified mail to the applicant. Failure of the Planning Board to act upon a Preliminary Plan within 45 days after submission shall be deemed to constitute approval of such a plan.

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.

4.3 Definitive Plan

A. General

A Definitive Plan of a subdivision must be submitted to the Planning Board and Board of Health for approval. Said plan shall be governed by the Subdivision Regulations in effect at the time of submission of such plan, or in effect at the time of submission of a Preliminary Plan, provided that a Definitive Plan evolved there from shall have been submitted to the Planning Board within seven (7) months from the date of submission of the Preliminary Plan. A Definitive Plan shall also be governed by the zoning in effect at the time of submission of such plan or at the time of submission of a Preliminary Plan from which a Definitive Plan is evolved, in accordance with the appropriate provisions of Chapter 40A of the Generals Laws, as amended.

B. Submission Procedure

The applicant shall submit the definitive plan to the Planning Board either by delivery at a regular or special meeting of the Board, or by delivery or registered mail, postage prepaid, addressed to the Planning Board. In each case, written notice (a copy of Form C) shall be filed by delivery or registered mail, postage prepaid, with the Town Clerk. If the notice is given by delivery, the Town Clerk shall, if requested, give a written receipt thereof.

A plan is deemed submitted when delivered to the Planning Board at a meeting of the board, or when sent by registered mail to the planning board. The date of receipt of such notice and such documentation as may be required by these rules and regulations shall constitute the effective date of submission.
Any person who submits a Definitive Plan of a subdivision to the Planning Board for approval shall file with the Board the following:

1. Eight (8) sets of prints of the Definitive Plan (dark line on white background) and application Form C (See Section 9.0) to the Planning Board, together with all other information and documentation, such as plans, reports, maps and cross sections, as required in these rules and regulations.

2. In accordance with MGL c. 41, Section 81U, the applicant shall file one (1) copy of the plan directly with the Board of Health, along with other necessary information and documentation.

3. Eight (8) copies of a properly executed Development Impact Statement (see Appendix)

4. The appropriate fee (see Section 8.0). The filing fee shall be in the form of a certified check or money order made payable to the Town of Hatfield, Massachusetts

5. Electronic copies of the Definitive Plan which meet the current version of the “MassGIS Standard for Digital Plan Submission to Municipalities” meeting the requirements for Level I submission standards. Electronic copies must be submitted on a CD-ROM and must be accompanied by the completed checklist required in the MassGIS standard.

C. Contents

The Definitive Plan shall bear the seal of a Massachusetts Registered Land Surveyor and a Registered Professional Engineer. The plan shall be at a scale of one (1) inch equals forty (40) feet or such other scale as the Planning Board may accept to show details clearly and adequately. Sheet size shall be 24 inches by 36 inches. 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. The subdivision name, boundaries, the coordinate north arrow, date, scale, legend and title. An inset at the scale of 1 inch equals 1,200 feet showing the location of the subdivision in relation to the Town.

2. The names and addresses of owners of record, the applicant and the Registered Land Surveyor and Registered Professional Engineer, and official seals.
3. Names and addresses of all abutters within 200’ of the proposed subdivision as they appear in the most recent tax list.

4. Lines of existing and proposed streets, ways, lots, rights-of-way, easements, and any public or common areas within the subdivision. The proposed names of proposed streets shall be shown in pencil until they have been approved by the Planning Board. Purpose of easement and any land to be permanently protected shall be indicated. All easements must be clearly shown on the subdivision plans and their purpose shall be clearly stated.

5. Sufficient data to determine the exact location, direction and length of every street and way line, lot line and boundary line, and to establish these lines on the ground.

6. Location of all permanent monuments and control points identified as to whether existing or proposed, and identified according to the Massachusetts State Plane coordinate system (NAD 1983 Datum). Bounds are required at all intersections of street lines, angle points, and changes in the curvature of street lines.

7. Location, names and present widths of streets bounding, approaching, or within 300’ of the subdivision.

8. Suitable space on each sheet to record the action of the Planning Board and the signatures of the members of the Planning Board (or officially authorized person).

The following items may be submitted on separate sheets.

9. Delineation of all regulated resource areas as defined by Ch. 131 of the Massachusetts Wetland Protection Act, within and adjacent to the subdivision

10. A topographic plan of the entire subdivision with existing and proposed topography at 2’ contours.

11. Location of existing buildings and significant structures.

12. Boundary lines and dimensions of all proposed lots with dimensions and lot areas in acres, and all lots labeled numerically and in sequence.

13. A street layout plan at a horizontal scale of 1” = 40’, for each street in the subdivision showing exterior lines, roadway lines, partial lot lines, curb lines,
intersection angles, points of tangency, and radii of curves. Also included on the street layout plan shall be location, size, type of construction, elevations and invert, whenever applicable, of all pipes and conduits of the:

a. **Water Supply System**, including pumps, valves, stubs, gates, hydrants, and similar equipment;

b. **Storm Drainage System**, including manholes, pipes, culverts, catch basins, detention ponds, and appurtenant structures;

c. **Sanitary Sewerage System**, including piping, manholes, pumps, community septic tanks, and appurtenant equipment;

d. Electrical Supply Equipment: including poles, transformers, primary and secondary cables, lighting fixtures, and other electrical equipment

e. Other Utility Systems: such as gas, telephone, cable TV, or data lines

14. A Profile Plan on the same sheet located directly below and coordinated with the street layout plan, indicating existing profiles on the exterior and center lines (using light weight lines) and proposed profile on the center line (using heavy weight lines) of each proposed street, at a horizontal scale of 1"= 40’ and a vertical scale of 1”= 4’. All elevations shall refer to U.S.G.S. Mean Sea Level datum. Profiles shall show existing and proposed street grades, rates of gradient on percentages, ground and proposed elevations at center line of each fifty (50) foot station, and grades of intersection streets and ways shall be clearly indicated.

The Profile Plan shall show location of existing and proposed water, drainage and sanitary sewer lines, slopes and types (material and class) of all storm and sanitary sewer lines, invert, rim elevations and station of each manhole or catch basin.

15. A typical cross section for the full width of the proposed right-of-way shall show foundation material, wearing surface, crown and width of traveled way, curbing, grass strips, sidewalks, utility locations, etc.

16. Construction details for catch basins, manholes, end-walls, head-walls, rip-rap, and energy dissipators, detention ponds, access rows, level lip spreaders, etc.

17. Proposed layout of storm drainage, water supply, and sewage disposal systems.
a. Where feasible, for each lot not serviced by a sanitary sewer, show a proposed building envelope and location of septic system (including tank and soil absorption system) which complies with Title V of the state sanitary code. If a private well is required, a well location must be shown which meets the state sanitary code and town bylaws in relation to the proposed building envelope and the septic system component locations.

b. If any part of the subdivision is within 1,000 feet of a public sewer of the Town of Hatfield, it shall be connected to the municipal system. The applicant will be required to install dry piping if a planned extension of the town sewer system within the next five years after the date of filing will bring service within 1000 feet.

c. If any part of the subdivision is within 1,000 feet of the public water supply serving the Town, the proposed water supply system shall include fire protection services including sufficient fire hydrants to satisfy all Fire Department requirements. The applicant will be required to install water lines if a planned extension of the town water system within the next five years after the date of filing will bring service within 1000 feet.

d. Indicate how drainage patterns will affect adjacent properties outside the subdivision.

18. Lighting System. The applicant may include a complete street lighting system for the proposed street in the Definitive Plans. Such system shall be in conformance with existing systems in the Town, as supplied by the local electric company. The street lighting system will not be accepted by the Town unless the Town Meeting accepts the street. The type, number, height, and proposed brightness of the lights shall be included in this submission.

19. Vegetation Plan. Existing and proposed vegetation. Including name of dominant tree species and location of trees over 10” DBH (measured four and one-half feet above grade).

20. Natural Features. Water courses, wetlands, perennial and intermittent streams, ponds, vernal pools, prime agricultural soils, slopes over 25%, floodplain, recharge areas, rock outcrops, and scenic vistas shall be shown on the plan. The plan will identify any features that shall remain undisturbed.
21. **Cultural and Historic features.** Location of stone walls, barns, cemeteries, parks, bridges, and other historic, cultural, and archaeological features shall be identified. The plan will identify any features that shall remain undisturbed.

22. Location, size, and other appropriate description of water, gas, and other utilities or structures.

23. Where a storm drainage line, or any type of drainage structure discharges within 200 feet of a brook, stream, or drainage area, a profile will be shown of the brook, stream, or drainage area to determine condition, and proposed method of stabilization.

24. **Construction Quantities.** 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 a 20% inflation/safety factor

   e. Engineering inspection, materials testing, legal and other soft costs.

25. **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 and the Town of Hatfield’s bylaws governing such.
D. Additional Subdivision Requirements

1. Feasibility Report of Proposed Sanitary Sewage Systems
   Where sewage disposal is to be individual on-site sewage disposal systems, the Definitive Plan shall be accompanied by a ‘Feasibility Report of the Proposed Sanitary Sewage Systems’ certified by a Massachusetts registered Civil Engineer and carry his official seal. The purpose of the report is to evaluate the feasibility of the ground for subsurface disposal of septic tank effluents, based on the interpretation and analysis of percolation tests, soil characteristics and test borings, the water table, natural drainage patterns and other observations by the engineer.

   The report should take into consideration the following factors:

   a. Results of Percolation Testing – Such tests shall be executed in accordance with all applicable state and town rules and regulations

   b. A map showing locations of tests on each proposed lot and other pertinent data.

   c. Topographic and ground level conditions, natural drainage patterns and flood elevations of nearby waterways.

   d. Determination of underlying soil characteristics, absorption qualities, maximum groundwater elevations and distance to bedrock.

   e. Location and dimensions of each proposed on-site sewage disposal system, together with computations used in determining sewage leaching fields.

   f. An evaluation of the suitability of the proposed disposal system(s) to function properly in the given lots, and any modifications to the proposed system(s) or precautions that may be necessary.

   g. The report shall contain a statement by the Massachusetts registered Civil Engineer that the area is, or is not, suitable for the installation of individual sanitary sewage disposal systems of the general type and size as indicated in the Massachusetts Sanitary Code.

2. Wetlands Protection Act

   In accordance with Chapter 131, Section 40 of the General Laws, no person shall remove, fill dredge, or alter any water course, pond, flood plain or wetland
without filing written intention to perform said work with the local Conservation Commission, and with the State Department of Environmental Protection.

In order to determine if the proposed subdivision, or parts thereof, are subject to the provisions of the Wetlands Protection Act, the Planning Board will, where it deems necessary, submit a copy of the definitive plan to the Conservation Commission. The Conservation Commission shall, to the extent practicable, file a report with the Planning Board not later than forty-five (45) days after receipt of the plan stating that the proposed plans are not subject to the provisions of the Wetlands Protection Act, or the Wetlands Protection Act applies to certain designated areas. In the event the plan shall be governed by said Act, the Planning Board shall include in its decision for approval a condition that the applicant shall obtain approval from the Conservation Commission prior to any construction activity in the affected areas.

3. **Water Supply Protection District**
   Any portion of a proposed subdivision which lies within the limits of any Water Supply Protection District shall conform to the requirements of said district as stated in the appropriate section of the Hatfield Zoning Bylaw.

4. **Fire Water Availability**
   The applicant shall demonstrate that sufficient water exists to address fire needs. Any subdivision where the homes are sprinkled with a minimum of a sixty gallon basement cistern feeding the sprinklers will be assumed to meet this standard. In the alternative, a project may demonstrate that their will be adequate fire ponds or access to natural water bodies in a manor acceptable to the fire chief and meeting national standards.

5. **Hydrology Study and Drainage Calculation**
   The applicant shall submit drainage calculations, including rational method and TR-55 or TR-20, showing: (a) that any proposed drainage system has been designed according to the standards set forth in these rules; and (b) any impact said drainage system would have on existing drainage systems downstream from the proposed point of discharge.

6. **Lighting System, if used:**
   Outdoor lighting is not required. If used, any lighting system should comply with the recommendations of the International Dark-Sky Association, whose goal is “To preserve and protect the nighttime environment and our heritage of dark skies through quality outdoor lighting.” All street lights must be no more than 50-watt high pressure sodium or more energy efficient models. All street lights must contain full cutoffs (hoods covering the sides of the lamps) to avoid any
direct lighting off of streets and sidewalks. Maximum foot candles of any light shall be 1 foot candle.

7. **Restrictive Covenants**
The applicant shall submit, whenever applicable, as part of his application, any and all documents, such as homeowner’s association rules and regulations of any commonly owned/shared land, facility, detention pond, open space, recreation area, etc.

8. **Easements**
All easements to be granted by the developer to the Town shall be shown on the subdivision plans with bearings and distances, and their purpose shall be clearly stated. In addition, the applicant shall submit, prior to subdivision approval, easement documents, suitable for recording, deeding said easements to the Town at the applicant’s expense.

E. **Review by Board of Health as to Suitability of the Land**

At the time of filing of the Definitive Plan, the applicant shall also file with the Board of Health one copy of the Definitive Plan, dark line on white background. The Board of Health shall, within forty-five (45) days after filing of the plan, report to the Planning Board in writing its approval or disapproval of said plan. A copy of such report shall be sent to the applicant. If the Board of Health disapproves said plan, it 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 reasons therefore in such report, and, where possible, shall make recommendations for the adjustment thereof. Every lot (so located that it cannot be served by a connection to the municipal sewer system) shall be provided with a septic tank and drain-field satisfactory to the Board of Health.

F. **Development Impact Statement (DIS)**
Any land subdivision plan consisting of five (5) or more lots must be accompanied by an impact statement which details the probable effects of the proposed subdivision on the following aspects of concern to the Town. Details of the DIS can be found in the Appendix of this document.

G. **Approval of Definitive Plan**

Before approval of the Definitive Plan, the applicant shall comply with all the reasonable rules and regulations of the Town departments. Copies of the Zoning Bylaw, General Bylaws, Board of Health Regulations and other appropriate information may be obtained from the respective departments. Before final approval of the plan, the applicant shall insure that lots in a Definitive Plan are in conformity with the applicable
zoning regulations. Failure of the applicant to demonstrate this compliance will be adequate grounds for disapproval of the Definitive Plan

1. Review by the Conservation Commission

At the time of the filing of the Definitive Plan with the Planning Board, one (1) copy shall be filed by the applicant with the Conservation Commission for review. The making of a report by the Conservation Commission to the Planning Board concerning a proposed Definitive Plan shall not be treated as, nor deemed to be approved of, and Order of Conditions or any other approval provided by the Wetlands Protection Act or by any local wetlands bylaw. A request by the Planning Board for such a report shall not be treated as, nor deemed to be, a Notice of Intent or any other application provided by the Wetlands Protection Act or by any local wetlands bylaw.

2. Public Hearing.

Before approval, modification and approval or disapproval of a Definitive Plan is given, a Public Hearing shall be held by the Planning Board. Notice of the time and place of the hearing, and of the subject matter, sufficient for identification, shall be given by the Planning Board at the expense of the applicant by advertisement in a newspaper of general circulation in the Town of Hatfield once in each of two successive weeks, the first publication being not less than fourteen (14) days before the day of such hearing. A copy of said notice shall be mailed to the applicant and to all owners of land abutting upon the subdivision as appearing in the most recent tax list. The applicant or representative shall be present at the hearing.

3. Approval, Modification or Disapproval

After the required hearing, but within the period specified in the Subdivision Control Law for the submission of the Definitive Plan, the Planning Board shall take action thereon. It may approve, modify and approve, or disapprove said plan, as provided by statute. Any approval of the plan by the Planning Board shall only be given on condition that the designated lots or land shall not be built upon or served with any utilities, such as septic tanks or cesspools, and drainage without prior consent of the Board of Health. The Planning Board shall endorse on the plan such conditions as set forth by the Board of Health and the lots and land affected by such conditions. The action of the Planning Board in respect to such plan shall be certified and filed with the Town Clerk and
sent by mail, postage prepaid, to the applicant at his address as stated on the application.

In the event of disapproval, the Planning Board shall state in detail wherein the plan does not conform to these Rules and Regulations of the Planning Board or the recommendations of the Board of Health or officer and shall revoke its disapproval and approve of a plan which, as amended, conforms to these Rules and Regulations or recommendations. Any amended plans which are resubmitted for approval shall follow the same procedures as the original submission. Any amended plans submitted later than three (3) 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 that are in effect at the time of the amended plan's filing.

Final approval, if granted, shall be endorsed on the reproducible drawings of the Definitive Plan by the signatures of the majority of the Planning Board, but not until the statutory 20-day appeal period has elapsed following the filing of the certificate of the action of the Planning Board with the Town Clerk and said Clerk has notified the Planning 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.

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 and the Board of Selectmen.

4. **Endorsement.** An approved, or approved with modifications, plan shall not be endorsed until after the mandatory twenty (20) day appeal period has elapsed and not until the applicant has:

   1. Posted the necessary performance guarantee. In addition, the monetary value of the performance guarantee shall be adequate to cover all costs the Town would incur to complete the project at the end of the expiration of said guarantee, including but not limited to construction costs at State (or, if required, Federal) "prevailing" wages, record plans, street acceptance plans, and legal costs.

   2. Made the necessary corrections, whenever applicable, on the plan, easements, master deeds, restrictive covenants, etc., if
conditional approval was given to the satisfaction of the Planning Board.

3. Presented to the Planning Board, and the Planning Board has subsequently approved, any additional information requested as part of a conditional approval.

4. Paid the necessary inspection fee.

5. Presented to the Planning Board for their approval, two sets of plans showing the complete natural gas, electrical, telephone and cable TV supply systems (including pipes, pumps, valves, gates, hand-holes, transformer padmounts and similar equipment). Said plans will be accompanied by endorsements from the respective utilities that the plans have received their approval. In addition, if applicable, the electrical utility shall place a statement on the plans that the proposed underground electrical distribution system is capable of accommodating a future street lighting system with provisions for street lights (including hand-holes) included in the electrical system with approval from DPW that the placement will not interfere with other utilities.

6. Delivered to the Planning Board two (2) sets of reproducible drawings of the Definitive Plan with the necessary corrections.

7. Deliver an Irrevocable Offer of Dedication of all facilities to be dedicated to the public. Said offer must be accompanied by a lawyer's title opinion that the offer is free of any liens and encumbrances and all mortgages must be subordinated to the Offer. The Offer shall be irrevocable, except the offer can be withdrawn if the project proponent does not proceed with the project and requests that the subdivision approval be rescinded or otherwise amended such that the dedication is no longer necessary.

8. Deliver an electronic copy of the final plan which meet the current version of the “MassGIS Standard for Digital Plan Submission to Municipalities” meeting the requirements for Level I submission standards. Electronic copies must be submitted on a CD-ROM and must be accompanied by the completed checklist required in the MassGIS standard.
Failure of the applicant to meet the above requirements shall be full and sufficient reason to withhold endorsement.

If the applicant fails to submit the required Performance Guarantees, easements and other documentation and the endorsement of the Plan by the Planning Board is delayed more than six (6) months after the expiration of the twenty (20) day appeal period, the Planning Board, on its own motion, shall exercise its power to modify, amend, or rescind its approval of the subdivision plan or to require a change in the plan as a condition of said plan retaining the status of an approved plan.

4.4 Performance Guarantee

A. 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 these regulations, including the construction of streets and the installation of municipal services, for all lots in the subdivision, such construction and installation to be secured in accordance with Section 81U of the Subdivision Control Law 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 with agreement between the Planning Board and the applicant:

1. 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 appropriate Town departments, 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 under "B" below, and to cover the costs of inspections, record plans, street acceptance plans, and legal work, and a 20% contingency/inflation factor. 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.

   a. If financial performance guarantees are used, at least two lots in a subdivision which can be built on must be covered by a covenant (under paragraph b below) to insure that all work, including legal work, is completed. The lots will not be released from covenant until 12 months from the certified date of completion.
b. 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 Hatfield Zoning Bylaw, and the Rules and Regulations Governing the Subdivision of Land in Hatfield. 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."

c. 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, after consulting with the Town Treasurer, Town Counsel and/or the Select Board.

d. For any surety bond, (1) the surety must agree that any litigation stemming out of the bond will take place in Massachusetts; (2) The bond must include the name and address of the person to be served for any legal action; (3) The bond must specifically include the terms above.

e. No expiration date may be allowed in the bond (the bond must be valid until the work is complete) and the warranty performance period has been completed.

f. The applicant must provide an Irrevocable Right-of-Entry to allow the Town of Hatfield to enter the property to make any necessary improvements required in the Subdivision Regulations and the Definitive Plan approval if the Town is forced to call the financial performance guarantees. Accepting, calling, or using financial performance guarantees does not provide the Town with any responsibility to complete a project beyond that for which the Town is willing to undertake and for which there are sufficient performance guarantee funds to pay for. The property owner shall subordinate all property mortgages to the Irrevocable Right-of-Entry and record it in the Registry of Deeds or Land Court, as applicable.
2. **Approval with Covenant.** Instead of filing a bond or depositing money, the applicant may fulfill a covenant, 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.

Such covenant shall be inscribed on the Definitive Plan or on a separate document referred to on the plan and delivered to the Planning Board. The Planning Board shall turn over the covenant agreement to the Town Counsel, who shall review its contents and forward his comments in writing to the Planning Board. Upon approval of the covenant by the Planning Board, the applicant shall note the Planning Board's action on the Definitive Plan and the Planning Board shall record the covenant, endorsed Definitive Plan, and other appropriate documents at the Hampshire County Registry of Deeds.

**B. Completion Time Schedule**

The Performance Guarantee, whether by bond, deposit of money, or covenant, as previously described herein, shall be contingent upon the completion of such improvements as required in these Rules and Regulations within a period of two (2) years of the date of such bond, deposit of money, or covenant. 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 bond or covenant. In the case of a surety company bond, such an agreement for an extension shall not be effective until the surety delivers to the 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.

Failure to complete all improvements as required by these Rules and Regulations within the time allotted shall cause the Board a) to draw upon the performance guarantee (surety bond or deposit of money) 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 Chapter 41, Section 81 of Massachusetts General Law.

**C. Recording of Plan.** The Developer, shall, within ten (10) days after the Definitive Plan has been endorsed, record said plan, and, whenever applicable, the Planning Board's Order of Conditions, public easements (plans and documents), restrictive covenants, master deeds, etc., at the Hampshire County Registry of Deeds, and in the case of registered land, with the recorder of the Land Court. The cost of said recording shall be borne by the developer.
Subsequent to said recording and prior to any Building Permit being issued, the Project Applicant shall file within seven (7) calendar days one (1) print of the Definitive Plan with the Building Inspector. Further, in accordance with the statute, where approval with covenant is noted thereon, the Inspector shall issue no permit for the construction of a building on any lot within the subdivision, except upon receipt from the Planning Board of a copy of the Certificate of Performance releasing the lot in question.

D. Procedures for Partial Release

1. The applicant may, upon partial completion and installation of required improvements in a subdivision, as specified by these Rules and Regulations, the security for the performance of which was given by bond, deposit of money, letter of credit, or covenant, make 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 construction cost estimates, the subdivision approval, and the subdivision regulations in their entirety. The amount to be reduced by the Planning Board, after consultation with the DPW Director, 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 described in §III(B)5c1 and §III(B)5dA, but shall withhold no less than twenty (20%) percent of the original approved cost estimate or fifty thousand dollars ($50,000), whichever is greater. 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 under §IV(2)—Procedures for Full Release.

   b. **Covenant.** The applicant may request a Release of Conditions (see Appendix) 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 §V(A4), unless the Planning Board has already approved within the limits of the development a dead-end street exceeding said limits. 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.

E. Procedures for Full Release

1. The applicant 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. In the case of a covenant, the lots will not be released until 12 months from the certified date of completion. Before the Planning Board releases the full interest of the Town in said performance guarantee, the applicant shall submit to the Planning Board:

   a. Written evidence from the DPW Director or from a registered professional engineer chosen by the Planning Board, a certificate of statement (see Section 10.0 Appendix), at the sole cost of the applicant, 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 above-mentioned certificate or statement shall be supplied by the project’s registered professional engineer.

   b. A set of record construction plans. Said plans shall include, but not be limited to, all the information requested in Record Plans. Approval of said plans by the Planning Board shall take place after review of the former by the DPW Director.

   c. Street acceptance plan or plans and necessary documents, as stated in Acceptance Plans.

   d. Letters from the electric, telephone, gas and cable TV companies stating that their respective underground systems have been installed to their satisfaction.

   e. Said plans and documents, after approval by the Planning Board and the DPW Director, shall be presented by the Planning Board to the Town Meeting for a formal street acceptance.

   f. 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 fifteen (15) feet in width on each side of the centerline of all such sewers and water mains. The Planning Board may require greater than fifteen (15) feet in width on each side of the centerline where it deems necessary.

g. 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.

h. 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. The applicant shall have thirty (30) days after receipt of such notice to correct all problems mentioned in the above. Failure of the applicant to finish all the necessary work within said thirty (30) days shall cause the Planning Board to draw upon the bond or deposit of money as mentioned below. Any such bond may be enforced and any such deposit may be applied by the Planning Board for the benefit of the Town of Hatfield, as provided in Chapter 41, Section 81 of the M.G.L. 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.

2. **Release of Lots from Covenant in Exchange for Bond or Deposit of Money.**

The applicant 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.
SECTION 5.0  DESIGN STANDARDS

5.1 General Standards

No plan of a subdivision, unless waived as provided herein, shall be approved unless all of the building lots shown on the plan comply with the Zoning and the design and construction standards located herein.

Except as herein noted, the following shall be used as design standards. Where a difference between the standards as these Regulations exists, these Regulations shall be followed unless a waiver is granted by the Planning Board:

1. Streets, sidewalks, water systems, sanitary sewers, storm drain systems, public and private utilities and other infrastructure shall be constructed in accordance with these subdivision regulations and the current edition of the Massachusetts Highway Department “Standard Specifications for Highways and Bridges,” (referred hereto as the “Standard Specifications”).

2. Roads shall be designed in accordance with the appropriate American Association of State Highway and Transportation Officials (AASHTO) design manual for 20 mile per hour design speeds.

5.2 Relationship to Town Plans

The design and layout of a proposed subdivision should be guided by the goals and objectives of any adopted Master Plan, or statements of goals and objectives for the Town of Hatfield

5.3 Streets and Ways

A. The Planning Board may require higher standards than those set forth herein after for the design and construction of streets within a subdivision, provided that such requirement are necessary and are intended to benefit a substantial area outside the subdivision

B. Location and Alignment

1. All streets and ways shall be designed so that, in the opinion of the Planning Board, they will provide safe vehicular travel. Due consideration shall also be given by the applicant to the attractiveness
and design of the street layout in order to obtain the maximum livability and amenity of the subdivision. As far as practicable, streets should also follow natural contours.

2. The proposed streets shall conform, so far as practicable, to any Master Plan, as adopted in whole or in part by the Planning Board.

3. Provision shall be made, to the satisfaction of the Planning Board, for the proper projection of streets, or for access to adjoining property which is not yet subdivided or developed. 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. The right of way is for the benefit of the adjoining landowners, and that access will be without charge to these landowners. 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. Reserve strips prohibiting access to streets or adjoining property shall not be permitted, without written assent of adjoining property owners.

C. Street Offsets

1. Streets entering opposite sides of another street shall be laid out either directly opposite each other or with a minimum offset of one hundred and fifty (150) feet between their centerlines. This minimum offset shall also be observed whenever one or more streets entering opposite sides of another street are existing, whether located within or outside the boundary of the proposed development.

2. Streets entering the same side of another street shall be laid out with a minimum offset of one hundred and fifty (150) feet between their centerlines. This minimum offset shall also be observed whenever one or more streets entering the same side of another street are existing, whether located within or outside the boundary of the proposed subdivision.

3. Street jogs with centerline offsets of less than one hundred and fifty (150) feet should be avoided.
D. Road Design Standards

1. The minimum centerline radii of curved streets (horizontal alignment) shall be one hundred and fifty (150) feet for local streets and 300 feet for collectors. Greater radii may be required for streets with large projected traffic volumes.

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

3. 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.

4. Vertical alignment. The minimum sight stopping distance at three and one-half (3.5) feet above the pavement shall be 200 feet for local streets and 275 feet for collectors.

5. Minimum sight distance to stop. The minimum sight distance to stop-sign or obstructed-view intersection shall be 300 feet for local streets and five-hundred (500) feet for collectors.

6. As far as practicable, streets shall have an east-west orientation to maximize solar orientation and access.

E. Width

1. The minimum width of street rights-of-way shall be fifty (50) feet for Type I subdivisions and sixty (60) feet for Type II subdivisions. Greater width shall be required by the Planning Board when deemed necessary for present and future vehicular travel.

2. The pavement width for local streets shall be thirty (30) feet. The minimum pavement width for collector streets shall be twenty-eight (28) feet.

F. Grade

1. Grades of streets shall be not less than 0.5%. Grades shall not be more than six (6%) percent for collector streets nor more than ten (10%) percent for local streets.
2. On any street where the grade exceeds two (2) percent on the approach of the intersection, a leveling area, with a maximum slope of two (2) percent shall be provided for a distance of not less than forty (40) feet measured from the nearest gutter line of the intersecting street.

**G. Dead-end Streets / Cul-de-Sacs**

1. Dead-end streets shall not be longer than five hundred (500) feet, as measured along the centerline of construction of the street from the nearest connected existing public street which is not itself a dead-end street. A dead-end street is allowed up to 1,000 feet maximum if a corresponding amount of open space in the subdivision is dedicated (see Section II for the definition of Open Space). The formula is that for every two acres of open space dedicated, 100 feet of additional street length is allowed, up to 1,000 feet maximum.

2. The maximum number of lots that can be served by a dead-end street is fifteen (15).

3. Dead-end streets shall be provided at the closed end with a turnaround having an outside roadway diameter of at least one hundred and twenty-five (125) feet, and a property line diameter of at least one hundred and forty (140) feet.

4. At the center of the turnaround, a landscaped island shall be required. The island shall have a minimum radius of forty (40) feet and shall be graded, seeded and/or appropriately planted with acceptable trees or shrubs, or left with natural tree growth. The maintenance of said inner circle shall be the responsibility of the town.

5. The road going around a cul-de-sac turn around shall be a one way road twenty (20) feet wide around the island.

6. A hammerhead may be allowed instead of a cul-de-sac turnaround. Said hammerhead shall be designed a "T", in accordance with the attached sketch, to allow fire tracks and snow plows to turn around with only one backing-up movement. It shall be at the same width as the street they abut and shall be at least twenty-four (24) feet long. Lots may only gain frontage from one edge of the hammerhead.

**H. Surface Material**

When roads are paved, the following shall apply:
1. The sub-base shall be screened banked gravel, a mixture of 3”- 4”, 24” deep, except that the top 6” shall be processed 1.5”- gravel. A tolerance of one-half (1/2) inch above or below finished sub-grade will be permitted, provided this difference is not maintained over fifty (50) feet and the required cross section is maintained. The gravel borrow shall be laid to a depth of 18”.

2. The base or binder course (the first coat of asphalt) shall be asphalt concrete, in accordance with Standard Specifications, Class I Bituminous Concrete Pavement type I-l (Binder Course Mix). It shall be laid to a depth of 2.5”.

3. The surface course (the second and final coat of asphalt) shall be asphalt concrete, in accordance with Standard Specifications, Class I Bituminous Concrete Pavement Type I-l (Top Course Mix). It shall be laid to a depth of 1.5”.

4. Inspections shall be made by the project engineer and the municipality upon completion of each layer of sub-base and the binder and surface courses.

5. Paving may be completed in phases, to prohibit the damage of finish surfaces by construction vehicles.

I. Adequate Access

The street system within a subdivision shall connect with and have, in the opinion of the Planning Board, adequate vehicular, pedestrian, and bicycle access from a public way or private way that connects to the greater network of streets.

1. The physical condition or width of a public way from which a subdivision has its access must be sufficient, in the sole opinion of the Planning Board to either provide for emergency services or carry the traffic which is expected to be generated by such subdivision. If such access is insufficient, the Planning Board shall require the applicant 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 applicant.

2. 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 and necessary utilities) is insufficient and/or incapable of handling the additional volumes (e.g. traffic, storm water) 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.

5.4 Easements

1. Easements for utilities across lots or centered on rear or side lot lines shall be provided where necessary and shall be at least thirty (30) feet wide except that wider easements may be required by the Planning Board where necessary.

2. Where a subdivision is traversed by a water course, drainage way, channel or stream, the Planning 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 course, drainage way, channel or stream, and to provide for construction or other necessary purposes.

3. The applicant will cause to be recorded in the Hampshire Registry of Deeds, by appropriate instrument (deed) any necessary easements in the name of the Town of Hatfield for utilities, water courses or drainage channels, temporary turnarounds or other purpose, and to provide for the construction and installation of such utilities before the final bond is released. A copy of the appropriately executed instrument shall be submitted to the Planning Board after approval of the Definitive Plan, but before final endorsement.

5.5 Open Spaces

Before approval of a plan the Planning Board may also in proper cases require the plan to show a park or parks suitably located and of suitable character 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 Planning 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.

5.6 Protection of Natural Features

All natural and cultural features, such as large trees (greater than 10” in DBH), watercourses, scenic points, historic plots, barns, and similar community assets shall be preserved, if, in the opinion of the Planning Board, they will add attractiveness and value to the subdivision. Existing vegetation shall be minimally disturbed. Except where necessary to conform to road design, driveways, safety, and drainage, major earth grading shall be avoided. At least two trees per lot shall be preserved or planted within the right-of-way or within 10 feet of the right-of-way. All non-paved areas of the public way shall be appropriately replanted and reseeded. The top six (6) inches of all non-paved areas of the public way shall consist of good quality loam.

5.7 Sidewalks

1. Sidewalks of not less than four (4) feet in width are required on one side of local streets. On collector streets and streets in Type II subdivisions, there shall be sidewalks on both sides of the street and the sidewalks shall be at least five (5) feet in width.

2. 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 Department of Public Works, "Construction Standards" 1977 Edition, as amended.

5.8 Driveway Aprons and Approaches

1. Driveway approach areas from the edge of the public roadway to the edge of the public right-of-way shall be constructed in accordance with standards and permits set by the Town’s Department of Public Works.

2. The nearest line of any driveway shall not be closer than fifty (50) feet from the intersection of any two (2) streets.

5.9 Underground Utility Systems

All utility distribution systems, public or private, shall be placed underground.
5.10 Swales, Drainage, and Curbs

In circumstances where curbs are not appropriate, streets shall be designed to use Low Impact Development (LID) drainage systems to closely mimic natural systems that meet the following standards:

1. All of the stormwater from a 1” NRCS design storm drains into the ground and does not leave the site. A 1” NRCS design storm is a storm with 1” of rain within a 24 hour period. More than 80% of Western Massachusetts storms are at or below this level.

2. Water leaving the road enters grassed swales graded flat enough to avoid erosion and hold and treat water.

3. Measures to reduce runoff, improve groundwater recharge, and improve stormwater quality, such as rain barrels (barrels at the base of roof gutter leaders that store stormwater and provide water for future lawn and garden use), or rain gardens (rain is captured and retained in depressions carefully planted with native vegetation and allowed to drain into the ground.)

4. Curbs are only appropriate in narrow defined areas without opportunity for grassed swales or in village center-type projects. In those areas curbs shall be Type 2 bituminous concrete or cement concrete curbs or granite curbs Type SB (sloped) placed on the bituminous binder, if the road is paved, or granite curbs of the road is gravel. Curbs shall utilize a 6” reveal (or 6” of curbing exposed above the street pavement). The installation of bituminous berm, granite curb, granite edging and granite curb corners shall conform to the relevant provisions of the Standard Specifications. All catch basin frames shall be consistent with those used elsewhere in town.

5.11 Water Supply

A. Water Wells

No lot shall be built upon without the provision of potable water facilities specifically approved by the Board of Health.

B. Fire Hydrants

The applicant shall demonstrate that sufficient water exists to address fire needs. Any subdivision where the homes are sprinkled with the water supplied from an
on-site cistern sufficient to put out most fires are assumed to meet this standard. In the alternative, a project may demonstrate that there will be adequate fire ponds or access to natural water bodies in a manner acceptable to the fire chief and meeting national standards.
SECTION 6.0    REQUIRED IMPROVEMENTS FOR AN APPROVED SUBDIVISION

6.1    General

A.   The applicant shall provide all of the improvements required herein and installed at his/her own expense. All work done under this section shall be done under the direction of the Board, including registered engineer(s) and any other consultants appointed by the Board. The applicant shall promptly reimburse the Town for the full amount of the cost of such engineer(s) and other consultants. No performance guarantee under Section 4.5 shall be released until:

1.   All streets and other improvements shall have been in place over at least one winter (December 1 through April 15); See Section 4.4 C.1

2.   Full approval in writing of all work done under this section is received from the Board’s engineer(s) and any other consultants; and

3.   A cashier’s check or money order, payable to "Town of Hatfield, Massachusetts", has been received to provide reimbursement for the full amount of the cost of such engineer(s) and other consultants.

B.   In addition to the Mass. DPW Construction Standards, the following minimum specifications shall govern the installation of all roadways, utilities, and other improvements in all subdivisions.

6.2    Clearing and Grubbing

The entire area within the right-of-way lines, except for trees and other vegetation intended to be preserved, shall be cleared and grubbed of all stumps, brush, roots, and like material. All rock or masonry with a maximum dimension over three (3) inches and within six (6) inches of the top of sub-grade shall be removed. Trees intended to be preserved shall be protected by suitable boxes, fenders, or wells as appropriate. In cut area all material shall be removed to sub-grade. All unsuitable material, such as peat, highly organic silt or clay, or any other material that is considered to be detrimental to the sub-grade, shall be removed and shall be replaced by bank-run gravel, and be brought to proper compaction with a ten-ton roller.
6.3 Utility Installation

A. All utility distribution systems, public or private, shall be placed underground.

B. All utility lines shall be installed with the minimum soil cover specified in these regulations.

C. Electric, telephone, cable TV, fiber optic, and all other conduits shall be installed underground beneath the grass strip with a minimum cover.

D. Sewer pipes and related equipment, such as manholes and connecting Y’s, shall be constructed in conformity with specifications of the Department of Public Works.

E. Adequate disposal of surface water shall be provided. Catch basins shall be built in conformity with specifications of the Department of Public Works on both sides of the roadway on continuous grades at intervals of not more than three hundred (300) feet, at low points and sags in the roadway and near the corners of the roadway at intersecting streets.

F. Water pipes and related equipment, such as hydrants and main shutoff valves, shall be constructed to serve all lots on each street in the subdivision in conformity with specifications of the Department of Public Works.

F. Sewer and water connections for every lot shall be laid from the mains to the street lines before street surfacing is built.

G. Permission will not be granted to disturb the road surface for a period of five (5) years for the installation of public utilities.

6.4 Monuments

A. Reinforced concrete or granite monuments shall be installed at all street intersections, at all points of change in direction or curvature of streets, and at other points where, in the opinion of the Planning Board, permanent monuments are necessary. Such monuments shall conform to the standard specifications of the DPW Director and shall be set according to such specifications.

B. No permanent monuments shall be installed until all construction which would destroy or disturb the monuments is completed.
C. All monuments shall be installed under the direction of a Massachusetts registered land surveyor.

D. Iron rods or other markers suitable to the Board shall be installed at every corner of each lot within the subdivision. Their locations shall be noted on the definitive plan.

E. All monuments and markers shall be installed before final release of the security for the performance guarantee.

6.5 Trees and Planting

A. Tree Preservation

1. The landscape shall be preserved in its natural state insofar as practical by minimizing tree removal, except in connection with a property used for tree farming. If established forested areas are to be cleared, special attention shall be given to the planting of replacement trees. Land should not be clear-cut for the sole purpose of offering land for sale.

2. Every effort shall be made through the design, layout, and construction of a subdivision to save as many existing, mature trees as possible. Accordingly, the applicant shall institute alternative site design methods to assure the best chance of tree survival whenever the following criteria cannot be adhered to.

3. The following is a list of recommended measures for the protection of existing trees:

   a. There should be no operation of heavy equipment or storage of any materials under said tree within its natural drip line.

   b. Wherever possible, no grading or filling should be done within the drip line.

   c. No black top paving or vehicle parking should be located under evergreen trees.

   d. No more than twenty (20) percent of the area under any deciduous trees natural drop line may be paved.
e. All drainage from paved areas should be directed away from root zones.

3. On wooded lots, the applicant is required to submit a Tree Preservation Plan for within the limits of the proposed construction activity. The Plan must be prepared by a Massachusetts registered landscape architect, certified arborist or forester. The Tree Preservation Plan must include a scaled Site Plan including the following information:
   a. A tree inventory indicating the size, species, location, and condition of all significant trees within the limits of the proposed activity; also location of existing and proposed structures, improvements, utilities, and existing and proposed contours.
   b. Specific protection techniques and disease control, if applicable, that will be utilized to minimize disturbance to all trees remaining on site.
   c. A reforestation plan indicating size, species, location, and planting specifications of all street trees, yard trees, and replacement trees. The reforestation plan shall utilize a diversity of tree species with emphasis on native species when possible.
   d. Selection of replacement trees in regard to their number, size and species, shall be determined by the Planning Board upon recommendation of the Tree Warden or board approved Massachusetts certified arborist, on the basis of an analysis of tree canopy conditions, soil conditions, and other relevant factors.

B. Street Trees

1. The applicant is required to plant suitable broad-leaved deciduous shade trees along all streets. Said trees shall be located within the street right-of-way unless the Planning Board has approved otherwise. All trees shall be the equivalent of well rooted nursery grown stock, free of injury, harmful insects, and diseases. They shall be well branched and the branching structure should be sound and not interfere with traffic visibility. In certain cases, where the applicant’s Tree Preservation Plan demonstrates, to the satisfaction of the Planning Board, that suitable trees will be retained within the right-of-way, the Board may waive a portion of all the required street trees.

2. The applicant shall install street trees as follows:
a. In order to provide a mature tree canopy in the future, the distance between trees shall not exceed approximately 60 feet along the way. The Planning Board may grant an amendment on this requirement based on tree species and soil conditions.

b. Minimum height and DBH of all trees to be planted is at the discretion of the Planning Board, based on tree species and soil conditions.

c. Supplemental irrigation should be provided to all trees as needed during the summer months of the first growing season to ensure healthy maintenance.

d. The species and variety of the trees to be planted shall be species listed on the Preferred Tree List (See Attachment B).

e. No evergreen trees such as pine, fir, spruce or hemlock shall be planted as public shade trees along the way.

f. No trees or shrubs shall be planted at any corner or intersection where they could become a traffic hazard by obstructing vision or preventing safe vehicular travel.

g. All cut bankings that tend to wash or erode shall be planted with a low growing evergreen shrub and seeded with a deep rooted perennial grass or groundcover to prevent erosion.

h. In a subdivision, the applicant will be liable for all planted trees as to their erectness and good health for two calendar years after planting as determined by the Tree Warden or board approved Massachusetts certified arborist.

C. Tree Replacement

1. The applicant shall provide replacement trees on each lot to ensure that at least 35% of the lot outside the footprint of the house and driveway will be shaded. Plans submitted to the Planning Board shall show the estimated tree canopies after 15 years of growth, the specific names, sizes and locations of trees to be planted, and the total area of square feet of the area shaded by tree canopies. In determining the shaded area, measure the shaded area assuming that the shaded area is only that area directly under the drip line (See Attachment C).
2. The Planning Board will have the discretion to modify tree shading requirements under power lines and other obstructions which prohibit strict compliance with shading requirements, and to give shading credit for off-site trees and sidewalk tree canopies, where appropriate.

3. Selection of replacement trees in regard to their number, size and species, shall be determined by the Planning Board upon recommendation of the Tree Warden or board approved Massachusetts certified arborist, on the basis of an analysis of tree canopy conditions, soil conditions, and other relevant factors.

4. When possible, a diversity of trees shall be used, with a preference of species native to North America. Please see “List of Recommended Trees” (Attachment A) for preferred tree species.

5. Use of exotic plants, such as Norway Maple (Acer platanoides), Crimson King Norway Maple (Acer platanoides ‘Crimson King’), Ailanthus (Ailanthus altissima), Amur Corktree (Phellodendron amurense), Rhamnus cathartica (Common Buckthorn) and Fragula alnus (Glossy Buckthorn) is prohibited.

6. The applicant will be liable for all planted trees as to their erectness and good health for two calendar years after planting as determined by the Tree Warden or board approved Massachusetts certified arborist.

D. Remediation

1. Any tree shown to be saved on the above mentioned Tree Preservation Plan which, however, is removed or whose survival is irredeemably jeopardized in violation of these conditions shall be replaced in a manner to be determined solely by the Planning Board on advice of the Tree Warden or board approved Massachusetts certified arborist.

2. Failure by the applicant to comply with these conditions expeditiously may result in the Planning Board to retain a cash bond, held in an interest bearing account by the Planning Board jointly with the applicant for two years. Upon the completion of the above conditions, the applicant may request release of the funds, plus interest, retained by lender by sending a statement of completion and a request for release by registered mail to the Town Clerk and the Board.
E. **Enforcement**

1. The Tree Warden or any Planning Board member, or Board designee shall conduct periodic inspections of the site during land clearance and construction in order to ensure compliance with these conditions. Should the Conservation Administrator, Building Inspector, Town Engineer, Police Officer, or any other town official observe violations or possible violations of these conditions, such official shall immediately report same to the Tree Warden or the Planning Board.

6.6 **Street Signs**

Street name signs shall be purchased, constructed and installed in accordance with Hatfield standards. The applicant shall provide the posts and erect them at each intersection near the inside curb edge.

6.7 **Street Lights**

Installation of street lights shall be governed by current Town practice and shall comply with the recommendations of the International Dark Sky Association.

6.8 **Drainage**

A. The design and construction of the drainage system, including methods of construction and quality of materials used, shall be in conformance with the definitive plan and the Standard Specification.

B. The design capacity of the drainage systems and pipes, if any, shall be determined by the Massachusetts Stormwater Standards set forth in 310 CMR 10.05(6)(b)(1)(a). The engineer shall design the drainage system in accordance the criteria of the stormwater design manual “Stormwater Management Volume II: Stormwater Technical Handbook”, Massachusetts Department of Environmental Protection, as updated or amended.

C. Drainage systems, including drainage swales, detention, retention, and infiltration, must be designed to prevent any increase in peak flows for the one (1) or two (2), ten (10), and one-hundred (100) year Natural Resource Conservation Service (NRCS) design storms. TR-55 or TR-20, with all inputs and outputs shown, shall be used for calculating drainage systems. In addition, drainage systems should include water quality/settling basins that detain the stormwater draining off the
site in a 4/10 inch rain storm for an average of at least six hours. The system should be designed to mimic existing drainage patterns & flows, not release peak prior to normal peak flow, unless there is a documented problem and this will not cause a direct downstream impact.

D. Stormwater should be directed to enter an artificial wetland or stormwater treatment facility before entering an open stream channel. Stormwater shall not be permitted to cross any roadway upon the surface but must be piped underground. Stormwater runoff shall not be permitted to flow upon the road surface for a longer distance than three hundred (300) feet before it enters the underground system or, in systems without curbs, enters a designed stormwater swale.

E. All open stream channels shall be maintained except for short sections that need to be placed in a culvert to allow stream crossings. No open water body or pond or wet or swampy area shall be filled in unless it can be shown to the Planning Board that provision has been made in the lower drainage system to account for the removal of the storage area represented by the former wet or swampy area. In addition, permits and approval must be secured from the appropriate Municipal, State, and/or federal authorities.

F. All catch basins shall have four (4) foot sumps and gas traps with removable hoods.

G. Lot sub-drainage and foundations drains may NOT be discharged to road drainage.

H. The maximum depth of any portion of the storm system shall be ten (10) feet.

6.9 As Built Plan

A. After construction of all improvements is completed, and before release of the Performance Guarantee, the applicant shall prepare and submit to the Board three (3) copies of the Definitive Plan, revised in an As-Built Record Plan at a scale of one inch equals forty feet (1”=40’), which shall indicate the location of the following as built:

1. Street lines, showing centerline elevations at fifty (50) foot intervals;
2. Edge of traveled way, locations of paths and sidewalks;
3. All permanent monuments and all bounds;
4. Location and inverts of drainage system and any utilities required to be installed by the developer;

5. Location of all other underground utilities (such as electricity and telephone); and

6. All other improvements required by these Regulations or agreed upon as a condition to Plan approval.

B. The accuracy of such record plan shall be certified by a registered professional land surveyor. As part of the As-Built Plan, the developer shall submit to the Board a certification, by a registered engineer appointed or approved by the Board, in which said engineer certifies that all construction was executed strictly in accordance with these Regulations and with all requirements agreed upon as a condition to plan approval.

6.10 Final Cleanup

After completion of construction and before release of the performance guaranty, the applicant shall remove all temporary structures, debris, surplus materials and rubbish and shall otherwise leave the area in a neat and orderly appearance. Burning of the rubbish and waste material is prohibited.
SECTION 7.0    ADMINISTRATION

7.1 Authority

A. The Board shall be the administrative agency, of these regulations and shall have all the powers assigned them by Sections 81A through 81GG of Chapter 41 of the General Laws.

B. The Board may assign as their agents appropriate Town agencies or officials, and may hire consultants with the full cost of consulting services to be reimbursed to the Town by the applicant.

C. The Board on its own motion or on the petition of any interested person shall have the power to modify, amend or rescind its approval of a Plan of a subdivision, or to require a change in a Plan as a condition of its retaining the status of an approved Plan.

D. No modification, amendment, or rescission of the approval of a plan or changes to the plan shall affect the lots in such subdivision which have been sold or mortgaged in good faith and for valuable consideration subsequent to the approval of the plan, without the consent of the owner of such lots, as stated in MGL c. 41 §81W.

7.2 Inspections

A. Inspection shall be made and the project shall be certified in writing to the Planning Board by the DPW Director or the DPW Director’s authorized designee, or by a registered professional engineer chosen by the Planning Board, at sole cost of applicant.

B. The Planning Board shall notify the DPW Director and the developer in writing that the subdivision has been (a) approved; and (b) all the necessary approved plans and documents have been recorded at the Hampshire County Registry of Deeds, therefore, 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 with the DPW Director. Construction shall not commence on any portion of the subdivision until this condition has been met.

C. The developer shall notify in writing the Department of Public Works and the Planning Board two (2) 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.

The installation of underground utilities and services shall be inspected by the DPW Director or the Board of Health, as appropriate, or their appointed representatives before the back filling of trenches or other covering of structures.

The curbing shall be inspected by the DPW Director prior to the placement of the top course of bituminous concrete surface.

The roadway shall be inspected by the DPW Director upon completion of the sub-grade gravel base course, binder and surface course prior to each required construction step.

The sidewalk shall be inspected by the DPW Director upon completion of the sub-grade gravel base course, binder and surface course prior to each required construction step.

Following the completion of all the improvements required by Sections V (Design Standards) the subdivision shall be inspected by the DPW Director.

E. Unless each phase of the work, including the materials used on the project, has been inspected by the DPW Director, no further work shall be done on any other phase of construction.

F. Inspections shall be requested by the applicant two (2) working days in advance by notice to the DPW Director.

G. The cost of inspection shall be paid by the applicant according to the fees in effect during construction.

H. If Town staff 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 total cost of such services, plus ten (10) percent to pay the Town’s administrative costs, shall be paid by the applicant.

I. Inspections by the DPW Director 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.
7.3 Permission Required
No building shall be erected within a subdivision without permission from the Building Inspector.

7.4 Validity
The invalidity of any section, paragraph, sentence, clause, or provision of these regulations shall not invalidate any other section, paragraph, sentence, clause or provision thereof.

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

7.6 Statutory Rules and Regulations
For matters not covered by these rules and regulations, reference is made to MGL C. 41, § 81-K to 81-GG, inclusive
SECTION 8.0 FEES

8.1 Fee Schedule

Fees shall be as follows and shall accompany each application:

<table>
<thead>
<tr>
<th>Service</th>
<th>Fee Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approval Not Required (ANR) Surveys</td>
<td>$50 (no new lot)</td>
</tr>
<tr>
<td></td>
<td>$50 + $25 per new lot</td>
</tr>
<tr>
<td>Preliminary Subdivision Plan</td>
<td>$125 plus $20 per newly created lot</td>
</tr>
<tr>
<td>Definitive Subdivision if no Preliminary Plan</td>
<td>$500 plus $400 per newly created lot</td>
</tr>
<tr>
<td>Definitive Subdivision if Preliminary Plan</td>
<td>$200 plus $175 per newly created lot</td>
</tr>
<tr>
<td>Subdivision Plan amendments</td>
<td>$200 per submittal, plus $200 for each new lot not in original plan</td>
</tr>
<tr>
<td>Review Costs</td>
<td>As deemed necessary by Planning Board</td>
</tr>
<tr>
<td>Inspection Costs for all supervision and inspection by the Town or its engineers or representatives</td>
<td>At customary rates</td>
</tr>
<tr>
<td>Request to change guarantees</td>
<td>$100 per request to change or reduce</td>
</tr>
<tr>
<td>Review of final as-built plans</td>
<td>$150</td>
</tr>
<tr>
<td>Final Street layout plans</td>
<td>Same as ANR fees</td>
</tr>
</tbody>
</table>

8.2 Rules for hiring outside consultants

A. If after receiving a subdivision application the Planning Board determines that it requires technical advice unavailable from municipal employees and departments to review the application, it may employ outside consultants. The Planning Board may, by majority vote, require that the applicant pay a reasonable review fee for the employment of outside consultants chosen by the Planning Board alone.

B. A review fee may be imposed only if:

1. the work of the consultant consists of review of studies prepared on behalf of the applicant, and not of independent studies on behalf of the Planning Board,
2. the board finds that an adequate review can not be performed by town personnel,
3. the work is in connection with the applicant’s specific project, and
4. All written results and reports are made part of the record before the Planning Board.

C. Before a fee is imposed:

1. The applicant shall be given five business days notice and opportunity to submit written comments relative to the invitation for bids or request for proposals.

2. The applicant shall be given five business days notice and opportunity to comment on all bids or proposals prior to the selection of the consultant and the award of a contract.

3. The applicant shall be given five business days notice and the opportunity to file an appeal of the selection of the outside consultant with the Select Board. Grounds for said appeal are limited to written claims, with written documentation, that the consultant selected has a conflict of interest or does not possess the minimum required qualification in accordance with M.G.L. c. 44, §53G. If the Select Board does not act within thirty days the Planning Board’s decision shall stand. All time limits for action shall be extended during administrative appeals and processes detailed in paragraphs 1, 2, and 3 above.

4. Any invitation for bids or request for proposals shall indicate that award of the contract is contingent upon payment of a review fee. If the applicant fails to pay the review fee within ten days of receiving written notification of the execution of a contract with a consultant, the board may deny the subdivision approval.

5. Each review fee shall be deposited in a special account established by the municipal treasurer pursuant to M.G.L. c. 44, §53G.
   a. Funds from the special account may be expended only for the purposes described above, and in compliance with municipal procurement requirements.
   b. Within sixty days of the completion of the project or of such time as the applicant formally withdraws the proposal, the applicant shall receive a final report of funds in the special account and shall be paid any unspent excess in the account, including accrued interest (if any).
SECTION 9.0  FORMS

Form A  Application for Endorsement of Plan Believed Not to Require Approval (ANR)

Form B  Application for Approval of a Preliminary Plan

Form C  Application for Approval of a Definitive Plan

Form D  Certified List of Abutters

Form E  Notice of Public Hearing

Form F  Performance Bond Agreement

Form G  Covenant Agreement

Form H  Release of Conditions

Form I  Certificate of Performance
NOTE: File two (2) completed Form A (with application fee, see Section 8.0 of Hatfield Subdivision Rules and Regulations), plus the original Mylar plan and eight (8) copies of the plan with either the Town Clerk or the Planning Board.

To the Planning Board:
The undersigned, believing that the accompanying plan of his/her property in the Town of Hatfield does not constitute a subdivision within the meaning of the Subdivision Control Law, herewith submits said plan for a determination and endorsement that the Planning Board approval under the Subdivision Control Law is not required. If the applicant or owner is a corporation, trust, or other such entity, proof of signatory authority must be provided.

1. Application Information

Address of Property Location: ____________________________________________________________

Applicant: __________________________________________________________________________

Address: __________________________________________________________________________

Zip Code: ________________ Telephone: __________________________ Email: _______________________

Status of Applicant: Owner_______ Lessee_______ Contract Purchaser_______ Other ______________

Owner (if different from applicant): __________________________________________________________________________________________

Address: __________________________________________________________________________

Zip Code: ________________ Telephone: __________________________ Email: _______________________

Owner's Agent: __________________________________________________________________________

Address: __________________________________________________________________________

Zip Code: ________________ Telephone: __________________________ Email: _______________________

Signature: __________________________________________________________________________

Engineer or Surveyor: __________________________________________________________________________

Address: __________________________________________________________________________

Zip Code: ________________ Telephone: __________________________ Email: _______________________

2. Property Information

Address: __________________________________________________________________________

Assessor Identification: Map #, __________Parcel # ______________

Recorded in the Hampshire Registry of Deeds: Book _____________ Page ______________
3. Evidence of Qualification and Division of Land:
   
   (a) Number of existing lots ________________________________
   
   (b) Area of existing lot or lots ________________________________
   
   (c) Frontage of existing lot or lots ________________________________
   
   (d) Number of proposed lots ________________________________
   
   (e) Minimum area of proposed lot or lots ________________________________
   
   (f) Minimum frontage of proposed lots ________________________________
   
   (g) Minimum width of proposed lots ________________________________
   
   (h) Required frontage located on (name of street) ________________________________

______________________________  ________________________________
Signature of Owner               Signature of Applicant (if other than owner)

FOR PLANNING BOARD USE ONLY

1. Date ________________________________ Time ________________________________
   
   Application received ________________________________
   
   Eight (8) copies of plan received ________________________________
   
   (Distribution: planning board (5), town clerk (1), building inspector (1), DPW (1))
   
   Mylar received ________________________________
   
   Disk ________________________________

2. Filing Fee $50.00 - check or cash (circle one), amount ________________________________

3. Street information is correct or incorrect (circle one)
   
   Remarks __________________________________________________________
   
   __________________________________________________________
   
   __________________________________________________________

4. Endorsed or Rejected (circle one) ____________________________________ (Date)
   
   Remarks __________________________________________________________
   
   __________________________________________________________

5. Town Clerk notified in writing ____________________________________ (Date)

6. Reproducible returned to applicant ____________________________________ (Date)
NOTE: File a complete application form and fee (with application fee, see Section 8.0 of Hatfield Subdivision Rules and Regulations), plus eight (8) prints of the plans with the Planning Board. Include with the application all other necessary and supporting information and documentation. This procedure is according to Section 4.2 of the Code of the Town of Hatfield (Subdivision Regulations) and according to M.G.L. Chapter 41§ 81S.

To the Planning Board:
The undersigned submits the accompanying Preliminary Plan of property located in the Town of Hatfield for approval as allowed under the Subdivision Control Law, M.G.L. Chapter 41§ 81 and the Rules and Regulations governing the Subdivision of Land in Hatfield, Massachusetts.

1. Application Information

Address of Property Location: __________________________________________________________

Applicant: _______________________________________________________________________

Address: _______________________________________________________________________

Zip Code: ___________ Telephone: __________________________ Email: _______________________

Status of Applicant: Owner_______ Lessee _____ Contract Purchaser_______ Other _______________

Owner (if different from applicant): _______________________________________________________________________

Address: _______________________________________________________________________

Zip Code: ___________ Telephone: __________________________ Email: _______________________

Owner’s Agent: _______________________________________________________________________

Address: _______________________________________________________________________

Zip Code: ___________ Telephone: __________________________ Email: _______________________

Signature: _______________________________________________________________________

Engineer or Surveyor: _______________________________________________________________________

Address: _______________________________________________________________________

Zip Code: ___________ Telephone: __________________________ Email: _______________________

2. Property Information

Address: _______________________________________________________________________

Assessor Identification: Map #, ___________ Parcel # ___________

Recorded in the Hampden Registry of Deeds: Book ___________ Page _________________
3. General Description of Plan:
   (a) Plan Title
   (b) Location of Property
   (c) Total Acreage of Tract
   (d) Number of lots allowed by zoning
   (e) Minimum area of proposed lot or lots

________________________________________
Signature of Owner ................................

________________________________________
Signature of Applicant ............................

FOR PLANNING BOARD USE ONLY

1. Application __________________________ (Date)
   Eight (8) prints ______________________ (Date)
   Filing fee ($125 plus $20 per newly created lot) ______________________ (Date)
   Supporting documentation ______________________ (Date)

2. Acknowledgment of receipt by Town Clerk ______________________ (Date)

3. Reviews made by Town officers or consultants: (comments attached)
   Board of Health ______________________ (Date)
   Highway Department ____________________ (Date)
   Fire Department _______________________ (Date)
   Conservation Commission ___________________ (Date)
   Engineering Consultant ___________________ (Date)
   Other ________________________________ (Date)
   Other ________________________________ (Date)

4. Form D received ________________________ (Date)
   Approved by Town Assessor ________________ (Date)
   Abutters notified _________________________ (Date)

5. Planning Board action (see meeting minutes) ______________________ (Date)
   Approved ________ Modified and approved ________ Disapproved ________

6. Reproducible returned to applicant ______________________ (Date)
NOTE: File a complete application form and fee (see Section 8.0 of Hatfield Subdivision Rules and Regulations), plus eight (8) prints of the plans with the Planning Board. Include with the application to the Planning Board all other necessary and supporting information and documentation. In accordance with MGL c.41 Section 81U, the applicant shall file one (1) print of the plans, application form, and appropriate fee directly to the Board of Health. This procedure is according to Section 4.3 of the Code of the Town of Hatfield (Subdivision Regulations).

To the Planning Board:
The undersigned submits the accompanying Definitive Plan of a subdivision of property located in the Town of Hatfield for approval as allowed under the Subdivision Control Law, M.G.L. Chapter 41§ 81L, Subdivision Control Law, and the Rules and Regulations governing the Subdivision of Land in Hatfield, Massachusetts.

1. Application Information

Address of Property Location: ____________________________________________

Applicant: ________________________________________________________________

Address: __________________________________________________________________

Zip Code: ______________  Telephone: ___________________________  Email: _______________________

Status of Applicant: Owner_______  Lessee _______  Contract Purchaser_______  Other _______________________

Owner (if different from applicant): __________________________________________________________________

Address: __________________________________________________________________

Zip Code: ______________  Telephone: ___________________________  Email: _______________________

Owner’s Agent: ____________________________________________________________

Address: __________________________________________________________________

Zip Code: ______________  Telephone: ___________________________  Email: _______________________

Signature: ___________________________________________________________________

Engineer: __________________________________________________________________

Address: __________________________________________________________________

Zip Code: ______________  Telephone: ___________________________  Email: _______________________

Surveyor: __________________________________________________________________

Address: __________________________________________________________________

Zip Code: ______________  Telephone: ___________________________  Email: _______________________
2. Property Information

Address: ________________________________________________________________

Assessor Identification: Map #, ___________ Parcel # _________________

Recorded in the Hampden Registry of Deeds: Book ___________ Page ________________

Location and description of property ________________________________________

______________________________________________________________

3. Attach a copy of Form D and a list of the names and addresses of the abutters and property owners within 300 feet of this subdivision, as received from the assessor’s office.

4. The following are all the mortgages and other liens or encumbrances on the whole or any part of the above described property:

______________________________________________________________

______________________________________________________________

______________________________________________________________

______________________________________________________________

5. Title of Definitive Plan ________________________________________

a. Was a preliminary plan submitted? Yes _________________ No _________________

b. If Yes, the preliminary plan this definitive plan evolved from was submitted to the Planning Board on (date) _________________________.

c. The Preliminary Plan was:

   approved_________________,
   approved with modifications ________________, or
   disapproved ________.

d. Date of Planning Board decision on the preliminary plan _________________________.

This application shall be binding upon the heirs, executors, administrators, successors, and assigns of the undersigned owner or owners of record:

______________________________________________________________

Signature of Owner                                                                 Signature of Applicant
FOR PLANNING BOARD USE ONLY

1. Application ______________ (Date)
   Eight (8) prints ______________ (Date)
   Filing fee ____________________ (Date)

   (If no preliminary plan, $500 plus $400 per newly created lot. If preliminary plan filed, $200 plus $175 per newly created lot)

   Supporting documentation ______________(Date)

2. Acknowledgment of receipt by Town Clerk ______________________ (Date)

3. Reviews made by Town officers or consultants: (comments attached)
   Board of Health _________________________(Date)
   Highway Department ________________________(Date)
   Fire Department ____________________________(Date)
   Conservation Commission _________________________(Date)
   Engineering Consultant _________________________(Date)
   Other _________________________________________(Date)
   Other _________________________________________(Date)

4. Form D received _____________________________(Date)

   Approved by Town Assessor ______________________(Date)

   Abutters notified _______________________________(Date)

5. Form E executed by Planning Board ___________________________(Date)

6. Public Hearing held _____________________________(Date)

7. Performance guarantee supplied _____________________________(Date)

8. Planning Board action (see meeting minutes) ____________________________(Date)

   Approved ___________ Modified and approved _______ Disapproved _________

9. Original returned to applicant _____________________________(Date)
TOWN OF HATFIELD PLANNING BOARD
FORM D: Certified List of Abutters

DATE __________________________

To the Planning Board:
The undersigned, being an applicant for approval of a (circle one) preliminary / definitive plan of a proposed subdivision entitled submits the following sketch of the land in the subdivision listing the names of the adjoining owners in their relative positions and indicating the address of each abutter on the sketch or in a separate list, including owners of land separated from the subdivision only by a street or way.

____________________________________________________________
Signature of Owner

To the Planning Board:
This is to certify that the names and addresses of the parties listed as adjoining owners to the parcel of land shown above are the latest owners of record.

____________________________________________________________
Hatfield Town Assessor
TOWN OF HATFIELD PLANNING BOARD
FORM E: Notice of Public Hearing

DATE ____________________________

__________________________, having submitted a definitive plan of a subdivision of land in
Hatfield located __________________________, as shown on a
plan by __________________________ dated ________________, a public hearing will
be held thereon at the __________________________ on ________________
at ________ p.m., in accordance with the provisions of the Massachusetts General Laws, Chapter 41,
Section 81-T, as amended.

______________________________
Chair, Hatfield Planning Board

.
THIS AGREEMENT made this ______________ day of __________, ___, at Hatfield, in the county of Hampshire and Commonwealth of Massachusetts by and between ______________________ party of the first part, hereinafter called the SUBDIVIDER, and the TOWN OF HATFIELD, a township within said County of Hampshire acting through its Planning Board, party of the second part, hereinafter called the TOWN.

WITNESS: __________________________________________

WHEREAS the Subdivider has petitioned the Town for approval of a Definitive Plan of a subdivision entitled: ______________________ Located ______________________ said Plan has been submitted to the Town Planning Board, copies of which are on file in the office of said Board.

NOW THEREFORE, in consideration of the approval of said Definitive Plan and plan profile by the Planning Board of said Town, the Subdivider agrees with the Town as follows:

1. To construct and install streets, ways, utilities and improvements as shown on the approved Definitive Plan, cross-section and plan-profile in strict compliance with the subdivision rules and regulations of the Planning Board and in accordance with the following general specifications:

   a. Streets and ways shown on the Plan shall be cleared for the entire width, including the necessary side slope excavations, and the roadway shall be excavated to sub-base grade and below sub-base grade where specified by the Planning Board and/or Highway Superintendent, and then brought up to sub-base grade by compacting gravel the required number of inches.

   b. Utilities shown on the Definitive Plan and plan-profile endorsed by the Planning Board shall be installed, where specified, including: water mains, hydrants, sanitary sewers, storm water drains, manholes, catch basins, electrical and telephone wires and cables, together with their appurtenances.

   c. All roadways shall consist of a gravel base course of twenty four (24) inches of good binding gravel placed upon the sub-base in two layers with the first layer consisting of eighteen (18) inches of bank-run gravel and a second layer consisting of six (6) inches of fine grade road gravel, each layer thoroughly rolled true to lines and grades.
d. The hardened surface of the roadway shall be paved the required width, and the hardened surface treatment shall be compacted bituminous concrete, Type I-1, at a depth of three (3) inches, placed in two (2) layers, as specified in Section 5.3 H, of the Subdivision Regulations of Hatfield.

e. Monuments, sidewalks, curbs, loaming and seeding, planting and street signs shall be installed as shown on the Definitive Plan and in accordance with the Subdivision Regulations.

2. To file with the Planning Board a Certificate of Performance attesting to the satisfactory performance of all works and installations as set forth in this agreement and the subdivision rules and regulations of the Town at which time the Planning Board or their authorized representative shall inspect the works and installations and said Board will proceed with the release of the deposit or bond if the provisions of this agreement have been completed.

3. SPECIAL CONDITIONS:
The Planning Board, its representatives, or other agents of the Town shall have right of entry at all times during the life of this agreement for the purpose of examination and inspection of works and installations included herein and that the Town at its discretion shall have the right to use whatever materials may be in or on the land for completion of said works and installations as hereinafter provided.

a. All easements to be transferred to the Town by recording said instruments in the Hampshire County Registry of Deeds or Land Court at the expense of the Subdivider before the final bond is released.

b. Sale or transfer of any lot or lots abutting any street covered in this Bond Agreement shall not release the Subdivider of any obligation contained herein to complete any roadway construction, including clearing, excavation, side slopes, utility installations, grading, gravel or paving, monuments, sidewalks, curbing, loaming, seeding, planting, and street signs in the fifty (50) foot right-of-way strip.

4. To deposit with the Town Treasurer in the form of a Certified Check or Pass Book payable to the Town of Hatfield, or file with the Town Treasurer a bond with sufficient sureties, approved by the Town in the amount of ________________ which shall insure to the said Town the faithful performance by the subdivider, of the within covenants, promises and agreements, which shall be applied in one of the following ways:

a. Full amount to be deposited before the Definitive Plan is endorsed and to be released on satisfactory completion of this agreement.

b. Full amount to be deposited before the Definitive Plan is endorsed at the request of the subdivider, partial releases to be made upon satisfactory completion an approved by the Planning Board of items 1 (a), 1 (b), 1 (c), 1 (d), and the remainder to be released upon completion of remaining conditions of this agreement.
NOW, THEREFORE, if the Subdivider shall, on or before ______________, make and complete the work and installations as set forth herein and file with the Planning Board the Certificates of Performance required) any cash deposited hereunder shall be released to the Subdivider, and, the obligation under any surety bond filed with the Board shall be null and void; otherwise the amount which the Town pays to complete said work and installations shall be deducted from such cash deposit, and, the principal and surety shall pay to the Treasurer of the Town the amount which the Town pays to complete said work and installation provided, however, the amount shall not exceed the total deposit required or the penal sum of the bond.

This agreement shall terminate upon satisfactory completion of all requirements under the subdivision rules and regulations of the Planning Board and of said work and installations agreed to.

This instrument includes the Subdivider, his administrator, executor, successor or assigns.

The Subdivision herein states as one of the material allegations that induce the said Town to approve this subdivision that he/it is the owner of the tract in fee, subject to the following incumbrance: __________ ____________________________ and that he will not sell, convey, mortgage or pledge the tract in whole, or in part, except as individual building lots, without consent of the Town and without making such sale, conveyance, mortgage or pledge subject to the conditions set forth herein.

IN WITNESS WHEREOF, the said Subdivider and mortgagee has/have caused his/her seals to be affixed and these presents to be signed the day and year first above written.

MORTGAGEE

____________________________________________

SUBDIVIDER

____________________________________________

RECEIPT of the original, hereof, together with the cash deposit or Bond stipulated in paragraph (4) is hereby acknowledged.

HATFIELD PLANNING BOARD

Date __________________________

____________________________________________

Chair, Hatfield Planning Board
TOWN OF HATFIELD PLANNING BOARD
FORM G: Covenant Agreement

DATE __________________________

The undersigned ____________________________

 Name(s) (Print or Type)

of ____________________________

 (no. and street) (City), (County), (State)

hereinafter called "Covenantor", having submitted to the Hatfield Planning Board, a Definitive Plan of a subdivision entitled ____________________________

 (Name of Subdivision)

dated ________________ prepared by ____________________________ does hereby covenant and agree with said Planning Board and the successors in office of said Board, pursuant to the General Law, Chapter 41, Section 81-U as amended, that:

1. The covenantor is the owner of record of the premises shown on said Plan;

2. This covenant shall run with the land and be binding upon the executors, administrators, heirs, assigns of the covenantor, and their successors in title to the premises shown on said Plan;

3. The construction of streets and ways and the installation of utility services and improvements shall be provided to serve any Regulations of said Planning Board before such lot may be built, upon or conveyed, other than by mortgage deed; provided that a mortgage who acquires title to the mortgaged premises by foreclosure or otherwise and any succeeding owner of the mortgaged premises or part thereof may sell any such lot, subject only to that portion of this covenant which provides that no lot so sold shall be built upon until such streets, ways, services and improvements have been provided to serve such lot;

4. The construction of all ways and the installation of all municipal services shall be completed in accordance with the applicable rules and regulations of the Planning Board within _________ months from the date said plan is approved.

5. Nothing herein shall be deemed to prohibit a conveyance subject to this covenant by a single deed of the entire parcel of land shown on the subdivision plan or of all lots not previously released by the Planning Board without first providing such streets, ways, services and improvements;
6. This covenant shall take effect upon the approval of said Plan;

7. Reference to this covenant shall be entered upon said Plan and this covenant shall be recorded when said Plan is recorded.

The undersigned ______________________________ (wife, husband,) of the covenantor hereby agree that such interest as (I, we) may have in said premises shall be subject to the provisions of this covenant and insofar as is necessary release all rights of tenancy by the courtesy, dower, homestead and other interest therein.

EXECUTED as a sealed instrument this ____ day of ____________, ____.

_______________________________________________________
(Witness Signature)

_______________________________________________________
(Witness Signature)

COMMONWEALTH OF MASSACHUSETTS
Hampshire County, Massachusetts, DATE ________________, ____

Then personally appeared _______________________________ and acknowledged the foregoing instrument to be ______ free act and deed, before me.

________________________________________
Notary Public

My commission expires ________________________ .
TOWN OF HATFIELD PLANNING BOARD
FORM H: Release of Conditions

(Covenant Approval Release)

DATE ________________________________

The undersigned, being a majority of the Planning Board of the Town of Hatfield, Massachusetts, hereby certify that the requirements for the construction of ways and installation of municipal services called for by the covenant dated ____________________, ___ and recorded in the Hampshire County of Deeds, Book _____ Page_____, (or registered in _________________ Land Registry District as Document No. ________, Page ________) completed to the satisfaction of the Planning Board as to the following enumerated lots shown on plan entitled __________________________ recorded with said Deeds, Plan Book ________________, Plan ____________, or registered in said Land Registry District, Plan Book ____________, Plan ____________, (or registered in said Land Registry District, Plan Book ____________, Plan ____________) and said lots are hereby released from the restrictions as to sale and building specified thereon.

Lots designated on said Plan as follows:

___________________________________________________________________
___________________________________________________________________
___________________________________________________________________

Majority of the Planning Board of the Town of Hatfield

____________________________________
____________________________________
____________________________________
____________________________________

COMMONWEALTH OF MASSACHUSETTS
Hampshire County, Massachusetts; DATE ____________________, ___

Then personally appeared ____________________________ of the above named members of the Planning Board of the Town of Hatfield, Massachusetts, and acknowledged the foregoing instrument to be the free act and deed of said Planning Board, before me.

________________________
Notary Public

My commission expires ____________________
FORM I: Certificate of Performance

(Registered Engineer’s and/or Surveyor’s Certificate)

DATE ____________________________

NOTE: File one completed form with the Planning Board and one copy with the Town Clerk, accompanied by a request from the subdivide requesting release of bonds or deposit of money on specified works and installations.

To the Planning Board:
The undersigned hereby certifies that the following described works and/or installations have been made in accordance with the approved Definitive Plan:

Name of Subdivide ________________________________________________________________

Name of Subdivision _______________________________________________________________

Location of Subdivision _____________________________________________________________

Description of works and/or installations certified to: ________________________________

____________________________________________________
____________________________________________________
____________________________________________________
____________________________________________________
____________________________________________________
____________________________________________________

________________________________________
SEAL Signature of Engineer or Surveyor
SECTION 10.0  APPENDIX

APPENDIX A:  Development Impact Statement

APPENDIX B:  List of Recommended Trees

APPENDIX C:  Methodology to determine Tree Canopy Shade Coverage in Square Feet

APPENDIX D:  “Planting Trees in Designed and Community Built Landscapes: Checklists for Success”, US Forest Service
10.1 Appendix A: Development Impact Statement

A Development Impact Statement (DIS) is a documented, written analysis of a proposed development which provides the Planning Board and town officials with information necessary for plan review. It is a developer’s responsibility to prepare and document the DIS in sufficient detail to permit an adequate evaluation by the Planning Board; however, additional data may be requested in writing by the Board. It is necessary to respond to all sections of the DIS form except when a written exemption is granted by the Planning Board.

NAME OF PROJECT:
ACREAGE:
TYPE OF PROJECT:
OWNER(S):
LOCATION:
PARCEL NUMBER(S):
ZONING DISTRICT(S):
ENGINEER:
ARCHITECT:
PLANNER:

I. PROJECT DESCRIPTION
   A. Number of Units: Total___ Low Income___ Single Family___
      Two Family___ Row House___ Apt.____ Other___
      Condominium Ownership___ Rental___ Private___

   B. Number of Bedrooms: Row Houses___ Apartments___

   C. Approximate price/unit: Private___ Condominium___ Rental___

II. CIRCULATION SYSTEMS
   A. Street Design--Explain reasons for location of streets, stubs, and intersections.

   B. Street Classification--Classify the streets based on Hatfield’s definitions of local and collector streets. Project the number of motor vehicles to enter or depart the site per average day and peak hour.

   C. Parking--Discuss the number, opportunities for multiple use, and screening of parking spaces.
D. Pedestrian and Bicycle Circulation--Discuss the orientation of the pedestrian and bicycle system to activity centers, location of bike racks, and conformance with the bike path plans.

III. SUPPORT SYSTEMS

A. Water Distribution

1. Public - Discuss the project's water distribution system, including projected demand, ability to serve all lots, use of water for air conditioning, and any special problems such as check valves or booster pumps which must be dealt with.

2. Private - Discuss the types of wells proposed for the project, means for providing fire supply, and any special problems which might arise.

B. Sewage Disposal

1. Public - Discuss the project's sewage disposal system, including projected flow, size of pumping stations, and any special problems such as lift stations or check valves which must be dealt with.

C. Storm Drainage - Discuss the storm drainage system including the projected flow from a 50 year storm, name of the receptor stream, and any flow constrictions between the site and the receptor stream.

D. Refuse Disposal - Discuss the location and type of facilities, hazardous materials requiring special precautions, and screening.

E. Lighting - Discuss the location and size of lights, and methods used to screen adjoining properties from glare.

F. Fire Protection - Discuss the type and capacity of fuel storage facilities, location of storage areas for hazardous substances, special requirements, and distance to fire station.

G. Recreation

1. Public - Indicate the distance to and type of public facilities.

2. Private Discuss the type of private recreation facilities to be provided within the development.
H. Schools - Project the student population of the project for the nursery, elementary, junior high school, and senior high school levels and indicate the distance, capacity, and present enrollment of the nearest elementary and secondary schools.

IV. NATURAL CONDITIONS
Describe briefly the following natural conditions:

A. Topography - Indicate datum, source, date, slopes greater than 25%.

B. Soils - Indicate prime agricultural land, depth to bedrock, extent of land which has been filled.

C. Mineral Resources - Indicate extent and economic importance of resource, extent and means of proposed extraction, rehabilitation measures.

D. Surficial geology

E. Flood prone areas

F. Depth to water table

G. Vegetative cover

H. Aquifer recharge areas

I. Wetlands

J. Unique wildlife habitats

K. Unique flora

L. Watercourses

V. DESIGN FACTORS
Describe briefly the following features. Photographs are helpful.

A. Present visual quality of the area

B. Location of significant viewpoints

C. Historic structures

D. Architecturally significant structures
E. Type of architecture for development

VI. ENVIRONMENTAL IMPACT
A. Measures taken to prevent surface water contamination
B. Measures taken to prevent ground water contamination
C. Measures taken to maximize ground water-recharge
D. Measures taken to prevent air pollution
E. Measures taken to prevent erosion and sedimentation
F. Measures taken to maintain slope stability
G. Measures taken to reduce noise levels
H. Measures taken to preserve significant views
I. Measures taken in project design to conserve energy
J. Measures taken to preserve wildlife habitats
K. Measures taken to ensure compatibility with surrounding land uses

VII. PLANS
Describe how the project relates to the following guidelines.

A. Hatfield Master Plan

B. Regional plans prepared by the Pioneer Valley Planning Commission.

VIII. PHASING
If the development of the site will take place over more than one year, supply a schedule showing how the development will be phased. A flow chart is helpful. This time table shall include the following elements:

A. Stripping and/or clearing of site

B. Rough grading and construction
C. Construction of grade stabilization and sedimentation control structures

D. Final grading and vegetative establishment

E. Landscaping

F. The construction of any public improvements shall be specified explaining how these improvements are to be integrated with the development.

G. The number of housing units and the square footage of nonresidential uses to be constructed each year and their estimated value shall be specified.
10.2 Appendix B: List of Recommended Trees

An asterisk * denotes a species native to North America. These should in general be preferred to non-native species, as they contribute to the local ecology in ways that exotic species can not.

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Mature Height</th>
<th>Mature Canopy Spread</th>
<th>Growth Rate</th>
<th>Zone</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Acer ginnala</em></td>
<td>Amur Maple</td>
<td>15’-20’</td>
<td>Equal spread</td>
<td>Medium</td>
<td>Zone 3</td>
<td>Yellow / orange / red fall color, drought tolerance. Street tree / lawn tree</td>
</tr>
<tr>
<td><em>Acer griseum</em></td>
<td>Paperbark Maple</td>
<td>25’-35’</td>
<td>Half or equal to height</td>
<td>Slow</td>
<td>Zone 4</td>
<td>Exfoliating cinnamon colored bark, red fall foliage. Lawn tree</td>
</tr>
<tr>
<td><em>Acer rubrum</em></td>
<td>Red Maple</td>
<td>50’-75’</td>
<td>Half or equal to height</td>
<td>Medium to Fast</td>
<td>Zone 3</td>
<td>Tolerates wet sites to dry sites. Brilliant red fall foliage Street tree / lawn tree</td>
</tr>
<tr>
<td><em>Acer saccharum</em></td>
<td>Sugar Maple</td>
<td>60’-80’</td>
<td>40’-55’</td>
<td>Slow</td>
<td>Zone 3</td>
<td>Salt intolerant, vivid fall colors. Lawn tree</td>
</tr>
<tr>
<td><em>Amelanchier species</em></td>
<td>Serviceberry</td>
<td>15’-30’</td>
<td>Variable</td>
<td>Medium to Fast</td>
<td>Zone 4</td>
<td>Dainty white spring flowers, red berries favored by birds, attractive smooth gray bark, good winter profile.</td>
</tr>
<tr>
<td><em>Betula nigra</em></td>
<td>River Birch</td>
<td>40’-75’</td>
<td>40’-60’</td>
<td>Medium to Fast</td>
<td>Zone 4</td>
<td>Cultivar Heritage is a superior selection. Often multi-stemmed, exfoliating pinkish bark, prefers moist soils. Resistant to bronze birch borer.</td>
</tr>
<tr>
<td>Scientific Name</td>
<td>Common Name</td>
<td>Mature Height</td>
<td>Mature Canopy Spread</td>
<td>Growth Rate</td>
<td>Zone</td>
<td>Notes</td>
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</tr>
<tr>
<td>Betula alleghaniensis *</td>
<td>Yellow birch</td>
<td>60’-75’</td>
<td>50’-60’</td>
<td>Medium to fast</td>
<td>Zone 4</td>
<td>Brilliant golden fall foliage, shiny bronze bark, often multi-stemmed. Prefers moist soils</td>
</tr>
<tr>
<td>Celtis occidentalis*</td>
<td>Hackberry</td>
<td>40’-60’</td>
<td>Nearly equal to height</td>
<td>Medium to Fast</td>
<td>Zone 3</td>
<td>Elm like form, drought and wind tolerance. Street tree</td>
</tr>
<tr>
<td>Ceridiphyllum japonicum</td>
<td>Katsura</td>
<td>40’-60’</td>
<td>Variable</td>
<td>Medium to Fast</td>
<td>Zone 4</td>
<td>Often multi–stemmed, needs ample room. Prefers moist soil. Street tree/lawn tree</td>
</tr>
<tr>
<td>Cercis Canadensis*</td>
<td>Eastern Redbud</td>
<td>20’-30’</td>
<td>25’-35’</td>
<td>Medium</td>
<td>Zone 5</td>
<td>Good understory tree / shade tolerance. Magenta pink flowers on leafless branches in spring.</td>
</tr>
<tr>
<td>Cladrastis kentukea*</td>
<td>Yellowwood</td>
<td>30’-50’</td>
<td>40’-55’</td>
<td>Medium</td>
<td>Zone 4</td>
<td>Spreading and low branching, good in lawns</td>
</tr>
<tr>
<td>Cornus alternifolia*</td>
<td>Pagoda Dogwood</td>
<td>15’-25’</td>
<td>½ times the height</td>
<td>Medium</td>
<td>Zone 3</td>
<td>Desirable native, good for shade and understory plantings. White flowers, red bark, distinctive shape. Disease resistant.</td>
</tr>
<tr>
<td>Cornus kousa</td>
<td>Kousa Dogwood</td>
<td>20’-30’</td>
<td>Equal spread</td>
<td>Slow to Medium</td>
<td>Zone 5</td>
<td>Resistant to anthracnose, drought tolerant. White flowers, mottled bark, vase shape.</td>
</tr>
<tr>
<td>Corylus colurna</td>
<td>Turkish Filbert</td>
<td>40’-50’</td>
<td>1/3 to 2/3 the height</td>
<td>Medium</td>
<td>Zone 4</td>
<td>Tolerates drought. Street tree / lawn tree.</td>
</tr>
<tr>
<td>Scientific Name</td>
<td>Common Name</td>
<td>Mature Height</td>
<td>Mature Canopy Spread</td>
<td>Growth Rate</td>
<td>Zone</td>
<td>Notes</td>
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<tr>
<td><em>Crataegus phaenopyrum</em></td>
<td>Washington Hawthorn</td>
<td>25’-30’</td>
<td>20’-25’</td>
<td>Medium</td>
<td>Zone 4</td>
<td>Clusters of showy white flowers leading to fall red berries favored by birds. Glossy green leaves turn orange/scarlet, many 1-3” thorns.</td>
</tr>
<tr>
<td><em>Fraxinus americana</em></td>
<td>White Ash</td>
<td>50’-80’</td>
<td>Equal spread</td>
<td>Medium</td>
<td>Zone 3</td>
<td>Grows wide as well as tall. Street tree / lawn tree</td>
</tr>
<tr>
<td><em>Fraxinus pennsylvanica</em></td>
<td>Green Ash</td>
<td>50’-60’</td>
<td>25’-30’</td>
<td>Fast</td>
<td>Zone 3</td>
<td>Fast growing, tough. Street tree / lawn tree</td>
</tr>
<tr>
<td><em>Ginko biloba</em></td>
<td>Ginko</td>
<td>50’-80’</td>
<td>30’-40’ +</td>
<td>Slow to Medium</td>
<td>Zone 4</td>
<td>Very adaptable but will not tolerate wet soils. Handsome yellow fall color. Plant only males. Street tree / lawn tree</td>
</tr>
<tr>
<td><em>Gleditsia trianthos</em> (thornless)</td>
<td>Honeylocust</td>
<td>30’-70’</td>
<td>Comparable spread</td>
<td>Fast</td>
<td>Zone 4</td>
<td>Gives filtered shade, fall gold color, excellent salt tolerance. Street tree / lawn tree</td>
</tr>
<tr>
<td><em>Gymnocladus dioicus</em></td>
<td>Kentucky Coffeetree</td>
<td>60’-75’</td>
<td>40’-50’</td>
<td>Slow</td>
<td>Zone 4</td>
<td>Male preferably, an underused tree. Tolerates a wide range of soils. Handsome bark and great winter profile.</td>
</tr>
<tr>
<td><em>Liquidambar styraciflua</em></td>
<td>Sweet Gum</td>
<td>60’-75’</td>
<td>2/3 equal to height</td>
<td>Medium to Fast</td>
<td>Zone 5</td>
<td>Fall color, star-shaped leaf, needs large area for root development, excellent for moist soils and along stream beds. Pyramidal maturing to dome shape.</td>
</tr>
<tr>
<td>Scientific Name</td>
<td>Common Name</td>
<td>Mature Height</td>
<td>Mature Canopy Spread</td>
<td>Growth Rate</td>
<td>Zone</td>
<td>Notes</td>
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</tr>
<tr>
<td><em>Liriodendron tulipifera</em></td>
<td>Tuliptree</td>
<td>70'-90'</td>
<td>35'-50'</td>
<td>Very fast</td>
<td>Zone 4</td>
<td>Plant in large areas -- one of our tallest native trees. Interesting yellowish green flowers appear in May after the leaves. Poor drought tolerance. Very large lawn tree.</td>
</tr>
<tr>
<td><em>Magnolia stellata, esp.</em></td>
<td>Star Magnolia</td>
<td>15’-25’</td>
<td>10’-15’</td>
<td>Slow</td>
<td>Zone 4</td>
<td>Needs moisture, flexible usage even on street</td>
</tr>
<tr>
<td>‘Centennial’</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Malus spp.</em></td>
<td>Flowering Crabapples</td>
<td>6’- 30’</td>
<td>15’-20’</td>
<td>Depends on variety</td>
<td>Zone 4</td>
<td>Many cultivars, good lawn tree providing four season interest.</td>
</tr>
<tr>
<td><em>Nyssa sylvatica</em></td>
<td>Tupelo, Gum Tree</td>
<td>30’-50’</td>
<td>20’-30’</td>
<td>Slow to Medium</td>
<td>Zone 4</td>
<td>Good in groves, moist soils, nice fall color and winter bark, difficult to transplant.</td>
</tr>
<tr>
<td><em>Ostrya virginiana</em></td>
<td>American Hophornbeam</td>
<td>25’-40’</td>
<td>2/3 equal to height</td>
<td>Slow</td>
<td>Zone 4</td>
<td>Unique capsules, handsome bark. Street tree / lawn tree</td>
</tr>
<tr>
<td><em>Oxydendrum arboretum</em></td>
<td>Sourwood</td>
<td>25’-30’</td>
<td>20’</td>
<td>Slow</td>
<td>Zone 5</td>
<td>4-season interest. Easier to transplant smaller specimens, lawn tree.</td>
</tr>
<tr>
<td><em>Platanus x acerifolia</em></td>
<td>London Planetree</td>
<td>70’-100’</td>
<td>65’-80</td>
<td>Medium</td>
<td>Zone 4</td>
<td>Interesting bark Good street tree /lawn tree Anthracnose susceptible</td>
</tr>
<tr>
<td>Scientific Name</td>
<td>Common Name</td>
<td>Mature Height</td>
<td>Mature Canopy Spread</td>
<td>Growth Rate</td>
<td>Zone</td>
<td>Notes</td>
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</tr>
<tr>
<td><em>Platanus occidentalis</em></td>
<td>American Sycamore</td>
<td>70’-100’</td>
<td>Equal or greater spread</td>
<td>Medium to Fast</td>
<td>Zone 4</td>
<td>Interesting bark. One of our tallest native trees, anthracnose susceptible. Lawn tree.</td>
</tr>
<tr>
<td>Quercus, spp. *</td>
<td>Red oak Pin oak</td>
<td>60’-80’</td>
<td>Equal or greater spread</td>
<td>Depends on variety</td>
<td>Zone 3</td>
<td>Long lived, adaptable. Street tree / lawn tree.</td>
</tr>
<tr>
<td>Sorbus alnifolia</td>
<td>Korean mountain ash</td>
<td>40’-50’</td>
<td>20’-30’</td>
<td>Medium</td>
<td>Zone 3</td>
<td>Clusters of white flowers, small red berries, orange-red fall foliage.</td>
</tr>
<tr>
<td>Sophora japonica</td>
<td>Japanese Scholartree</td>
<td>50’-70’</td>
<td>Comparable spread</td>
<td>Medium to Fast</td>
<td>Zone 5</td>
<td>Mid-summer flowers. Wide growing tree, needs good drainage. Street tree / lawn tree.</td>
</tr>
<tr>
<td><em>Tilia americana</em></td>
<td>Basswood</td>
<td>60’-80’</td>
<td>1/2 to 2/3 the height</td>
<td>Medium</td>
<td>Zone 3</td>
<td>Fragrant blossoms, lawn tree.</td>
</tr>
<tr>
<td><em>Tilia cordata ‘Greenspire’</em></td>
<td>Littleleaf Linden</td>
<td>40’-60’</td>
<td>30’</td>
<td>Medium</td>
<td>Zone 3</td>
<td>Pyramidal as a young tree becoming dome shaped with maturity. Street tree / lawn tree.</td>
</tr>
<tr>
<td><em>Ulmus americana</em></td>
<td>American Elm</td>
<td>60’-80’</td>
<td>1/2 to 2/3 the height</td>
<td>Medium to Fast</td>
<td>Zone 3</td>
<td>Disease resistant, street tree / lawn tree.</td>
</tr>
<tr>
<td>‘Princeton’ Valley forge</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ulmus parvifolia</td>
<td>Lacebark Elm</td>
<td>40’-50’</td>
<td>Equal or greater spread</td>
<td>Medium to Fast</td>
<td>Zone 5</td>
<td>Disease resistant, beautiful bark. Street tree / lawn tree.</td>
</tr>
<tr>
<td>Zelcova serrata</td>
<td>Zelcova</td>
<td>50’-80’</td>
<td>2/3 the height</td>
<td>Medium</td>
<td>Zone 5</td>
<td>Hardy, disease resistant. Street tree / lawn tree.</td>
</tr>
</tbody>
</table>
10.3 Appendix C: Methodology to determine Tree Canopy Shade Coverage in Square Feet

Use the mathematical formula $3.14r^2$ \( (r = \text{radius}) \)

1. Measure distance from tree trunk to mature canopy edge (radius)
2. Multiply the radius by itself (to get the radius squared)
3. Multiply that number by 3.14
4. The result is the canopy coverage in square feet
5. Calculate the canopy area for each tree and add them together
6. Divide by the total surface area (in square feet) to find shade coverage percentage

For Example:
- If the outer edge of the canopy is 18 feet from the tree trunk, then the radius is 18 feet
- That radius multiplied by itself (18 x 18) is 324
- That number multiplied by 3.14 is 1,017.36 square feet. This is the shade coverage for one tree
10.4 Appendix D: “Planting Trees in Designed and Community Built Landscapes: Checklists for Success”, published by the US Forest Service.

- Lift tree into planting space by root ball, not the trunk.
- Balance tree upright in center of planting space.
- For trees in wire baskets, cut and remove wire.
- Cut away strings and burlap or plastic, exposing root ball. Do not remove soil from root ball.
- If tree is container grown, cut and remove container.
- Prune dead or crushed roots and straighten or cut circling roots. Make clean cuts.

- Begin refilling with soil, watering as you fill to firmly set tree. Gently tamp.
- Never plant too deep. Trunk flare and top of root ball should be at grade. (Trunk flare may be hidden within the root ball.) Fill soil up to the tree base just to where roots begin to branch from trunk.
- Prune only dead or injured branches. Do not paint wounds.
- Remove tree wrap, tape or string on trunk. Trunks should be wrapped only to protect them in transit to planting site.
- Stake and brace most trees at planting time. Support tree but allow it to move or sway.
- Use wide, belt-like strapping to attached to two sturdy stakes. Do not use rope or wire through a hose.
- Mulch lightly and evenly with 2” of composted material at least to the diameter of crown of tree. Leave 3” circle of bare soil around the trunk. Deep layers of mulch can be harmful.
- Do not plant flowers under tree.
- Do not fertilize at planting time.