

The East Longmeadow Board of Public Works, pursuant to G.L. Ch. 41 §69D and the East Longmeadow By-Laws hereby makes and publishes the following rules for the Development of Paper Streets in East Longmeadow.

**RULES AND REGULATIONS  
FOR THE  
DEVELOPMENT OF PAPER STREETS  
FOR THE TOWN OF  
EAST LONGMEADOW, MASSACHUSETTS**

March 14, 2011

# **Table of Contents**

---

## **Section 1 Authority And Purpose**

1.1	Authority .....	1-1
1.2	Purpose .....	1-1
1.3	Applicability .....	1-1

## **Section 2 General**

2.1	Definitions .....	2-1
2.2	Summary of Procedures .....	2-1
2.3	Engineering .....	2-1
2.4	Inspection and Consulting Services.....	2-1
2.5	Amendments .....	2-1
2.6	Coordination with Municipal Departments and Other Agencies.....	2-1
2.7	Effective Date .....	2-1

## **Section 3 Plan Submission**

3.1	Basic Requirements .....	3-1
3.2	Submission.....	3-1
3.3	Submission Procedure.....	3-1
3.4	Contents .....	3-1
3.5	Performance Guarantee .....	3-1
3.6	Review Procedure.....	3-1
3.7	Modification, Amendment or Rescission of Plan Approval .....	3-1

## **Section 4 Design Standards**

4.1	Basic Requirements .....	4-1
4.2	Street Layout and Design Standards.....	4-1
4.3	Sidewalks.....	4-1
4.4	Storm Water Drainage .....	4-1
4.5	Municipal Services.....	4-1
4.6	Landscaping .....	4-1

## **Section 5 Construction Standards**

5.1	Basic Requirements .....	5-1
5.2	Submissions .....	5-1
5.3	Roadway Construction Standards .....	5-1
5.4	Drainage and Drainage Structures.....	5-1
5.5	Utilities Other Than Drainage Structures .....	5-1
5.6	Retaining Walls .....	5-1
5.7	Monuments/Survey Markers .....	5-1
5.8	Final Cleaning .....	5-1
5.9	Trees and Plantings .....	5-1
5.10	Inspections of Improvements.....	5-1

---

# Section 1

## Authority And Purpose

### 1.1 Authority

These Rules and Regulations are adopted by the Board of Public Works pursuant to Massachusetts General Law Chapter 41 Section 69D and the Town of East Longmeadow General Bylaws Section 4.090(B).

### 1.2 Purpose

The purpose of these Paper Street Rules and Regulations is to provide a consistent policy under which certain physical aspects of roadway design will be implemented. Most of the elements contained in this document are Public Works oriented and most are related to the development or platting process; however, it is intended that they apply to both public and private work designated herein.

These Rules and Regulations cannot provide for all situations. They are intended to assist but not to substitute for competent work by design professionals. It is expected that engineers will bring to each project the best of skills from their respective disciplines.

The Rules and Regulations are also not intended to limit unreasonably any innovative or creative effort which could result in better quality, better cost savings, or both. Any proposed departure from the Rules and Regulations will be judged, however, on the likelihood that such variance will produce a compensating or comparable result, in every way adequate for the user and Town.

The objectives are to develop Paper Street Rules and Regulations which will:

1. Be consistent with the Town of East Longmeadow Subdivision Rules and Regulations
2. Provide design guidance criteria to the private sector for the design of roadways within the Town of East Longmeadow
3. Establish improvement requirements and construction and design standards for the development of Paper Streets within the Town of East Longmeadow
4. Be designed in a manner to allow economical future maintenance

"The Subdivision Control Law has been enacted for the purpose of protecting the safety, convenience and welfare of the inhabitants of the cities and towns in which it is, or may hereafter be, put into effect 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 a Planning Board and of a Board of Appeals under the subdivision law shall be exercised with the due regard for the provision of adequate access to all of the lots in a subdivision by ways that will be safe and convenient for travel; for lessening congestion in such ways and in the adjacent public ways; for reducing danger to life and limb in the operation of motor vehicles; for securing safety in case of fire, flood, panic and other emergencies; for insuring

## **Section 1 Authority And Purpose**

---

compliance with the applicable zoning ordinances or bylaws; for securing adequate provision for water, sewerage, drainage and other requirements where necessary in a subdivision; and for coordinating the ways in a subdivision with each other and with the public ways in the city or town in which it is located and with the ways in neighboring subdivisions.”

### **1.3 Applicability**

These Standards shall govern all construction and improvements of all paper streets in the Town of East Longmeadow and applicable work within its service areas.

---

## Section 2 General

### 2.1 Definitions

For the purposes of these regulations, the terms and words, as used in these Rules and Regulations, shall have the meaning given therein, unless a contrary intention clearly appears in these definitions.

**Applicant/Petitioner** - A person, as hereinafter defined, who applies for the approval of a plan of a Paper Street Development. "Applicant/Petitioner" shall include an owner, his/her agent, representative or assigns.

**Board** - The Board of Public Works of the Town of East Longmeadow as established under Massachusetts General Laws Chapter 41 Section 69D.

**Bond** - For the purposes of these Rules and Regulations, a bond is a cash deposit given by Applicant and held by the Town confirming the Applicant's duty, promise, or another obligation by which he/she is bound.

**Consultants or Consulting Services** - Includes, but is not limited to those qualified and experienced as: architects, biologists, environmental experts, chemists, engineers, geologists, landscape architects, planners, lawyers, sanitarians, or surveyors.

**Contract** - The formal legal instrument executed by the Applicant in which he/she undertakes to construct the Paper Street Development in accordance with the requirements of the Town.

**Date of Submission** - A Plan shall be deemed submitted when delivered at a meeting of the Board or when sent by Registered Mail to the Board of Public Works, care of the Department of Public Works. If so mailed, the date of receipt shall be the date of submission of the Plan.

**Easement** - The right acquired by a person, government agency, or public utility company to use or control public or private land owned by another for a specific purpose.

**Engineer, Registered Professional** - A person registered to practice in Massachusetts by the Division of Registration to perform engineering as prescribed by Massachusetts General Laws.

**Land Surveyor, Registered** - A person registered to practice in Massachusetts by the Division of Registration to survey land as prescribed by Massachusetts General Laws.

**Paper Street** - A street shown on a recorded plan but never built on the ground.

**Paper Street Development Plan** - A plan of a proposed development of a Paper Street prepared in accordance with these Rules and Regulations.

## **Section 2 Plan Submission**

---

**Roadway** - That portion of a way which is designed and constructed for vehicular traffic.

**Street** - A public or a private way shown on a plan approved under the Subdivision Control Law and recorded at the Hampden County Registry of Deeds as required, or a way of existence when the Subdivision Control Law became effective in East Longmeadow..

**Utilities** - Private or municipal services to be furnished within the subdivision, including telephone lines, cable television lines, electrical lines, gas pipes, sewers, water drains, water pipes and storm drains, fire alarm systems, similar systems and their respective appurtenances.

### **2.2 Summary of Procedures**

All plans and all procedures relating thereto shall in all respects comply with the provisions of these Rules and Regulations, unless the Department of Public Works authorizes a variation therefrom in specified instances.

1. Any person desiring to make improvements to a Paper Street within the Town shall, before proceeding with the improvements or sale of lots, submit to the Department of Public Works a plan of such improvements and secure approval by the Department of Public Works as hereinafter provided.
2. The Department of Public Works may assign as its agents, appropriate Town agencies or officials and may hire consulting services to review plans and inspect improvements at the cost of the Applicant.
3. The Department of Public Works, 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 Paper Street Development Plan, or to require a change in a plan as a condition of its retaining the status of an approved plan after due notice and opportunity to the Applicant to be heard before the Department of Public Works.

### **2.3 Engineering**

The Paper Street Development Plan shall be approved, stamped and signed by a Registered Land Surveyor and a Registered Professional Engineer.

### **2.4 Inspection and Consulting Services**

Inspection shall be carried out at appropriate times during the development of the roadway as described in Section 5. The Applicant shall notify the Town Engineer/Superintendent of Public Works, at least 48 hours before carrying out each operation to be inspected.

The Town Engineer/Superintendent of Public Works may make arrangements with consultants to carry out such inspections and/or provide consulting services with regard to the project, on behalf of the Town.

The costs of inspection shall be born by the Applicant and paid to the Town of East Longmeadow by certified check or money order within thirty (30) business days of the inspection. Inspection costs shall include but not be limited to: on-site inspections, "portal-to-portal" travel, off-site analysis of plans, water testing, and soil testing. In

## **Section 2 Plan Submission**

---

the case of consultant services, a deposit shall be made to the Town as described in Section 3.2.

Failure to pay for such services as referenced above within thirty (30) days following the mailing of an invoice shall be sufficient grounds for the Department of Public Works to deny a plan or rescind its approval of a Paper Street Development Plan.

The Applicant has the responsibility to ensure that the approved construction plans are implemented. Use of qualified persons to furnish adequate and timely engineering supervision during construction is required. Surveillance and field revisions by Town officials or consultants appointed by the Department of Public Works cannot be construed as fulfilling this responsibility.

A cash deposit shall be required and shall be used by the Town to pay for any additional consultants which it finds necessary to hire in order to carry out an effective review of the proposed roadway improvements.

Failure to comply with the inspection procedure may necessitate removal of improvements at the expense of the Applicant or rescission of the approval of the plan.

### **2.5 Amendments**

These Rules and Regulations or any portion thereof may be amended from time to time in accordance with the General Bylaws Section 4.090 (B).

### **2.6 Coordination with Municipal Departments and Other Agencies**

Compliance with the applicable regulations and requirements of various Town Departments and other quasi-public agencies shall be required before a plan is approved by the Department of Public Works, and certification of performance relative to the proper construction and installation of respective utilities shall be required before the performance guarantee can be reduced or released.

### **2.7 Effective Date**

These regulations become effective after approval by the Board of Public Works and publication.

---

## **Section 3**

### **Plan Submission**

#### **3.1 Basic Requirements**

A Paper Street Development Plan must be submitted to the Department of Public Works for approval.

A Paper Street Development Plan shall be governed by the Paper Street Rules and Regulations in effect at the time of submission of such plan.

#### **3.2 Submission**

1. The Paper Street Development Plan shall not be deemed to have been submitted to the Department of Public Works until the Application Form, the prints of the Plan and the submission fee have been delivered to the Department of Public Works pursuant to the definition of date of submission in Section 2 of these Rules and Regulations.
2. The site shall be marked at the time of application by flags or other marking devices at the limits of work, so that the lines of ownership, the proposed lots, and the proposed street layout are obvious to those Town departments making site inspection.
3. If, in the judgment of the Department of Public Works, consulting services are necessary or appropriate, the Applicant shall, prior to a determination on a plan, deposit with the Town, an amount determined by the Department of Public Works to be sufficient to cover the full costs of such services. All such consultants shall be selected by the Department of Public Works and paid out of said deposit. The Town will reimburse the Applicant for any credits remaining after a consultant has been paid within thirty (30) days of said payment.

In the event the deposit is insufficient to cover consultant services, the outstanding balance is to be paid by the Applicant pursuant to procedures outlined in paragraphs 2.4 of these Rules and Regulations.

#### **3.3 Submission Procedure**

Any person who submits a Paper Street Development Plan to the Department of Public Works for approval shall file with the Department of Public Works the following:

1. Three (3) contact prints (dark line on white background) made from the original drawing (additional prints may be requested by the Department of Public Works).
2. All Paper Street Development Plan submissions shall be accompanied by a CD-Rom containing AutoCAD DWG compatible and Adobe PDF files including all information shown on the plans.
3. A properly executed application Form, appended thereto, signed by the Applicant and all other owners of record (notarized), and providing all information requested.

### **Section 3 Plan Submission**

---

4. A submission fee, payable to the Town of East Longmeadow, in the amount calculated as follows:
  - a. The submission fee shall be two hundred fifty dollars (\$250.00) plus one dollar per centerline length in feet of roadway to be developed (\$1/foot).

### **3.4 Contents**

The Paper Street Development Plan shall be approved by a registered Civil Engineer and a Registered Land Surveyor. The plan shall be at a scale of one (1) inch equals forty (40) feet, unless otherwise specified by the Department of Public Works, and of a sheet size not to exceed 24 inches by 36 inches outside dimensions. If multiple sheets are used, they shall be accompanied by an index sheet showing the entire Development, and all plans, layouts, profiles, cross-sections and application shall be deemed to constitute the Paper Street Development Plan.

#### **1. The Paper Street Development Plan shall contain the following information**

- a. A title, appearing in the lower right-hand corner of each sheet showing the name of the Plan, if any, the date, scale, graphical scale, north arrow, the names, addresses and seals of a Massachusetts registered professional engineer and surveyor who made the plan, and provisions to show the dates of all revisions of the plan.
- b. Locations of all permanent structures properly identified as to whether existing, remaining or proposed to remain.
- c. Major site features, such as existing stone walls, fences, buildings, trees larger than 18 inches dbh, rock ridges and out-croppings, waterways, natural drainage courses, swamps, flood plains, historic features, and wooded areas and ditches that exist on or near the site at the time of the survey. The plan shall identify which of the above shall remain undisturbed.
- d. Location of natural waterways and waterbodies within and adjacent to the Paper Street Development.
- e. Existing and proposed topography at a two (2)-foot contour interval for gentle slopes (less than 10%) and a five (5)-foot contour interval for steep slopes 10% or greater.
- f. Key plan, showing location of the street at a scale of 1 inch equals 1,000 feet and an accurate index plan at a scale of 1 inch equals 200 feet or a scale matching that used on the individual Assessor's map (full size) on which the proposed development is located.
- g. Location of stone bounds to be set at the intersections of street lines, angle points, and changes in direction of curvature of streets, and location of survey markers to denote all property intersection lines.
- h. Lines of existing and proposed streets, ways, lots, lot numbers, easements, and any public or common areas.
- i. Sufficient data to determine the location, direction, width and length of every street and way line, lot line and boundary line, and to establish these lines on the ground. This shall include the lengths and bearings of plan and

boundary lines of the streets and the radii, tangents, and central angles of all curves in street lines. The engineer or surveyor shall have the mathematical computations available to present to the Board (and/or Town Engineer), for a matter of record.

- j. Size and location of existing and proposed water supply and sanitary sewer facilities.
- k. Size and location of all fire hydrants.
- l. Where a storm drainage line discharges into 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.
- m. Indication of all existing and proposed easements and rights-of-way applying to the land and their purposes.

**2. Plan and Profile for each Paper Street showing:**

- a. Cross sections and construction details including:
  - i. Roadway section showing paving, centerline, crown, berm, shoulder, width, walk, and all other components or features.
  - ii. Drainage details for catch basins, manholes, inwalls and all other components or features, with specific references to the appropriate sections of the State Construction Standards.
  - iii. Drainage trench or waterway relocation section.
- b. A street layout plan on a separate 24 inches x 36 inches sheet, horizontal scale 1 inches = 40 feet, for each street showing exterior lines, roadway lines, partial lot lines, curb lines, intersection angles, points of tangency, and rail 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:
  - i. Water Supply System, including pumps, valves, stubs, gates, hydrants, and similar equipment.
  - ii. Storm Drainage System, including manholes, pipes, culverts, catch basins, a dwelling service line, downspout eaves, sump pumps and appurtenant structures.
  - iii. Sanitary Sewerage System, including piping, pumps, community septic tanks, and appurtenant equipment.
  - iv. Natural Gas Supply System, including pipes, pumps, valves, gates and similar equipment.
  - v. Electrical, Telephone and Cable TV Supply System, including piping, handholes, transformer padmounts, and similar equipment.
  - vi. Lighting System, including location of street light poles.
  - vii. Each Plan and Profile shall have a suitable title showing Street Name, Name(s) of Record Owner(s), Scales, Dates and Name of Registered Land Surveyor.

### **Section 3 Plan Submission**

---

viii. Each revision on Plan and Profile drawings shall be dated and described in a subnote thereon.

#### **3. Storm Drainage:**

The following information shall be required to be submitted as part of the Paper Road Development Plan:

- a. Water courses, ponds, marshes, flood plains, rock outcrop, and other significant natural features within 100 feet of the proposed high water mark (as determined by the 100-year storm frequency);
- b. A drainage area map outlining the watershed area; the map shall show the watershed boundary; the drainage pattern; location of bridges, culverts and other structures that affect the flow of water.
- c. A minimum 2-foot contour interval plan with spot grades shown as needed or required to describe the basin and adjacent area: this plan shall be accompanied by a profile of the basin including the principal and emergency spillway and/or outlet with all appropriate inlet and outlet elevations.
- d. Drainage calculations for proposed and existing conditions, done for a minimum 25 year and 100-year storms. Critical volume calculations should be checked by an independent alternate method using both short duration/high intensity and long duration storms.
- e. Soil logs, test pits and percolation tests within the basin area to determine existing conditions of the underlying soil and groundwater; this information shall be shown on a plan, and described in a report certified by Massachusetts Registered Professional Engineer and carry his/her official seal. Groundwater level tests will be considered valid only if they are done between March 1<sup>st</sup> and May 31<sup>st</sup>.
- f. Detail drawings of all structures including culverts, trash racks, anti-seep collars, risers, fencing and all other appurtenant works.
- g. Stabilization specifications including seeding, mulching, and rip-rapping.
- h. Construction notes required to assist in layout, construction, and checking of the completed facility.
- i. All drainage design information, drawings and runoff calculations must be prepared, signed, dated, and stamped by a Massachusetts Registered Professional Engineer using standard acceptable engineering methods. The runoff calculations should be based on soil cover conditions expected to prevail during the anticipated effective life of the structure.
- j. A 100-year design frequency storm is required for all storm water detention basins.

#### **4. 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 Specification for Highways and Bridges", current edition, as amended, of the Commonwealth of Massachusetts, and shall include:

- a. quantity, unit price and total amount for each construction item.
- b. total amount for cost of completion of project.

### **3.5 Performance Guarantee**

#### **1. General**

Before the Department of Public Works approval of a Plan, the Applicant shall agree to (i) complete the required improvements for the Paper Street within two (2) years from date of approval, (ii) to complete the required improvements according to Section 4 - Design Standards, and (iii) that no structure will be occupied until at least the basic course of the bituminous concrete, as specified in Section 4, has been applied to the streets that serve those structures.

These improvements for the construction of ways and the installation of municipal services are to be secured by a guarantee in accordance with Section 3.5.2 as follows. The amount of the guarantee shall be approved by the Department of Public Works and sufficient to cover the cost of all or any part of the improvements plus a twenty (20) % percent contingency factor.

Such construction and installations shall be secured by one, or in part by one and in part by the other, of the following methods that may from time to time be varied by the Applicant with the written consent of the Department of Public Works.

#### **2. Approval With Performance Guarantee**

The Applicant shall file performance guarantee in the form of a deposit of money in an amount determined by the Department of Public Works to be sufficient to cover the cost of all of the improvements specified herein. Said performance guarantee shall be approved as to form and manner of execution; and shall be conditioned on the completion of such improvements within two (2) years of the date of the performance bond. Such performance guarantee must be approved as to form and manner of execution by Town Counsel. The Department of Public Works may modify its requirements for any or all such improvements and the face value of such shall thereupon be reduced or increased respectively by an appropriate amount, if it is decided at any time during the term of the performance surety that:

- a. improvements have been installed in a satisfactory manner in sufficient amount to warrant reductions in the face amount of such deposit.

#### **3. Completion Time Schedule**

The performance guarantee as previously described herein, shall be contingent upon the completion of such improvements, as required in these Rules and Regulations, within two (2) years of the date of deposit of money.

Upon written request from the Applicant, the Department of Public Works may, at its discretion, grant an extension of time, and such agreement shall be executed and attached to the Approval.

### **Section 3 Plan Submission**

---

Failure to complete all improvements as required by these Rules and Regulations within the two years shall cause the Department of Public Works at its own discretion:

- a. to draw upon the performance guarantee (deposit of cash) in order to complete said improvements; or
- b. revoke the Paper Street Development Plan approval.

#### **4. Determination of Incompleteness**

The Department of Public Works shall retain a surety in the sum of twenty percent (20%) of the total cost of improvements that shall be released twelve (12) months after final completion. If the Department of Public Works determines that said construction, installation or filing of "as-built" plans has not been completed, it shall specify to the Town Clerk and to the applicant, in writing by registered mail, the details wherein said construction and installation have failed to comply with approval requirements.

#### **5. Inspection for Release of Performance Guarantee**

Prior to inspection for release of security for performance that was given by deposit, the applicant shall submit, a statement stamped and certified by either a Registered Professional Engineer or a Registered Land Surveyor that the required improvements are "built in conformity" with these Rules and Regulations, the approved Paper Street Development Plan, and the Standards of the DPW.

#### **6. Conveyance of Utilities and Easements to the Town**

Prior to the release by the Board of a deposit, the applicant shall execute an instrument transferring to the Town, without cost, valid unencumbered title to all storm drains, sewer mains and water mains, appurtenances thereto, constructed and installed in the Paper Street Development Plan or portion thereof to be approved, and conveying to the Town without cost and free of all liens and encumbrances perpetual rights and easements to construct, inspect, repair, renew, replace, operate and forever maintain the aforesaid above ground and underground utilities, with any poles, manholes, pipes, conduits, and other appurtenances, and to do all acts incidental thereto, in, through, and under the whole of all streets in the development or portion thereof to be approved and if any such utilities have been constructed and installed in land not within such streets, then, in through, and under an easement as shown on the Paper Street Development Plan.

#### **7. Binder Application**

Following the binder application and prior to any further roadway construction, the applicant shall submit an As-Built Certification signed and stamped by either a Registered Land Surveyor or a Registered Professional Engineer. Said Certification shall certify the roadway location, width, elevation, and that the centerlines of all roadways coincide with the centerline of the street right-of-way and that the preceding items conform to these Rules and Regulations.

**8. Reduction or Release of Performance Guarantee**

The amount of any deposit held by the Town may, from time to time, be reduced by the Department of Public Works and the obligations of the parties thereto released by said Department of Public Works in whole or in part.

**9. As Built Plans**

Prior to the final release, the applicant shall file a complete "as-built" plan showing all utility lines, with rim and invert elevations where applicable, hydrant location and type, main water and gas gates, sidewalk gates for water and gas (if installed) stationing of individual "y" or "t" on main sewer lines, ties to and depth of ends of sewer and water services at the street line, finished line and grade of streets, and any special drainage structures. Plan should indicate all required monuments that have been set as required and contain a certification as to their accuracy.

**10. Provisions for Long-Term Maintenance of Special Structures**

All new Paper Street Developments with proposed special structures such as bridges, drainage culverts, or pumping stations will include provisions for the long term maintenance of all such new systems. These provisions shall contain a release clause that will allow private maintenance provision to be terminated upon formal acceptance by the Town, which may require a performance guarantee for a period of time to be determined by the Department of Public Works.

**3.6 Review Procedure**

Before the Plan is approved the Department of Public Works will request written statements within thirty (30) days from the Conservation Commission as to potential applicability of Massachusetts General Laws, Chapter 131, Section 40, and the effects of the Paper Street Development on streams, wildlife, and similar considerations within the scope of the Conservation Commission.

**1. Approval or Disapproval**

If the Department of Public Works modifies or disapproves such a plan, it shall state in writing its reasons for its action and shall rescind such disapproval when the plan has been amended to conform to the Rules and Regulations of the Department of Public Works

**2. Time for Completion**

If the ways shown on any plan are not completed and the utilities aforesaid are not installed within the time so agreed to by the Applicant, or so required by the Department of Public Works any performance guarantee may be enforced and any such deposit may be applied by the Department of Public Works for the Benefit of the Town. Ways or portions thereof not completed within the time required shall thereafter be completed in accordance with the design and construction standards of the Department of Public Works, as stated herein, in effect upon the expiration of such time, unless an extension of time is granted by the Department of Public Works or the approval of said plan is revoked per 3.5.3.

**3.7 Modification, Amendment or Rescission of Plan Approval**

If the Applicant fails to submit the required performance guarantees and other documents and the approval of the plan is delayed more than six (6) months, the Department of Public Works, on its own motion, shall exercise its power to modify, amend, or rescind its approval of the plan.

---

# Section 4

## Design Standards

### 4.1 Basic Requirements

The Commonwealth of Massachusetts Department of Transportation Standard Specifications for Highways and Bridges, current edition, as amended (Standard Specifications) shall be followed, and all matters left open or undefined in those Standards shall be specified by the Board and the Town Engineer/Superintendent of Public Works on a case-by-case basis. Specification of matters not covered by the State Construction Standards shall be made by the Board or the Town Engineer on a case-by-case basis, based wherever possible on the publications of the American Association of State Highway and Transportation Officials (AASHTO) or other publications cited in these regulations.

### 4.2 Street Layout and Design Standards

#### 1. Location

- a. Paper Streets are developed as extensions of existing streets or new streets never constructed on the ground. Streets shall be continuous and in alignment with existing streets, as far as practicable, and shall comprise a convenient system, with connections adequate to ensure free circulation of vehicular travel. This section is intended to enable the Department of Public Works to ensure both adequate access to the development from adjacent streets and continuity of travel within the development itself.
- b. Efforts shall be made to provide for safe circulation of pedestrians and non-motorized vehicles.
- c. As far as practicable, roads shall follow natural contours.

#### 2. Alignment

- a. Visibility from the centerline of a street shall never be less than stopping sight distance as defined by AASHTO (current edition).
- b. The vertical alignment at grade changes or minimum stopping sight distance at three and one half (3.5) feet above the pavement shall be as specified by AASHTO (current edition).

#### 3. Intersections

Streets and ways shall be designed, to the extent practicable, so as to intersect in accordance with the standards as shown in the following:

- a. The grade of intersecting streets shall not exceed plus or minus 2%. No structure or planting that will impair corner visibility will be permitted within 25 feet of street intersections. Intersecting streets entering at angles of between 60° and 120° with the intersected street center line may be approved with greater visibility distances.
- b. The vertical grade of either intersecting street shall not exceed a slope of 3 percent for a minimum distance of 100 feet from the intersection.

## Section 4 Design Standards

---

- c. Street signs bearing approved street names shall be provided and installed by the applicant at his/her expense at all street intersections. Signs such as Stop, Yield, No Exit, etc. shall also apply. Sign style shall comply with the Manual on Uniform Traffic Control Devices (MUTCD) (current edition) and be submitted to the Board for their approval.

### 4. Street Widths

The proposed street shall match the existing pavement width and shoulder conditions of the adjoining roadway unless directed otherwise by the DPW.

### 5. Street Grades

Maximum roadway grades shall be as listed in Table 3.1.

**TABLE 3.1**

Road Grades in Local Streets

Classification	Max. Grade
Major (Arterial)	5%
Secondary (Collector)	7%
Minor (Lane)	9%
<sup>1</sup> Cul-de-Sac/Dead End	9%

<sup>1</sup>excluding turnaround

- a. The classification of town streets shall be as designated in the Plan of Circulation, and the classification of new streets and streets not shown on such Plan shall be as determined by the Department of Public Works.
- b. The following standards shall apply:
  - i. Street grades shall be not less than 0.5% to assure proper surface runoff.
  - ii. The centerline of the roadway shall coincide with the centerline of the right-of-way unless otherwise approved by the Board.

### 6. Cul-de-Sacs/Dead-End Streets/Turnarounds

- a. Paper Street Developments, not connecting to other ways in existence and constructed on the ground, shall include a turnaround at the street end point. The turnaround shall be a cul-de-sac or "Tee" configuration design to allow a SU class motor vehicle to complete a three-point reversal of direction. The Applicant shall bear the burden of demonstrating, to the DPW, that a turnaround cannot be designed within the street layout to accommodate the above movement.
- b. Cross Grades in the cul-de-sac shall be 3% + OT - ½% sloping from the radius point of the pavement to the outer diameter of the paved surface. Gutter grades shall be shown on the plan.

### 7. Cross Section

Street construction shall conform to good engineering practices. The Typical Cross Section shall include the paved roadway, curbing, sidewalks, grass strips, water, sanitary, storm drain, and utilities in substantial conformance with the existing street features adjoining the Paper Street Development.

### **4.3 Sidewalks**

See Section 5.3.6 Sidewalks.

### **4.4 Storm Water Drainage**

An adequate system of stormwater drainage shall be provided to address runoff from the proposed development, and no natural watercourse shall be altered or obstructed in such a way as to reduce or increase the natural run-off capacity, unless substitute means of run-off are provided. Such system may include a system of storm drains, culverts, ditches, underdrains, on-site management systems, and related installations, including catch basins and gutters and shall be designed and installed to provide adequate disposal of surface water, including control of erosion, flooding, storm water management and standing water from or in adjacent lands. The Board or Town Engineer may require culverts and other stormwater drainage installations where it deems necessary. All necessary easements for drainage shall be provided, whether on or off the site. Piping shall be supplied to each house lot for sump pumps and curtain drains.

When development of an area will increase runoff to downstream properties, an on-site stormwater management system shall be constructed. Such system will be designed to handle the 25, 50 and 100-year storms without increasing downstream runoff above pre-construction conditions, and such size shall be determined by using the flood routing procedure as described in the USDA Soil Conservation Service Technical Release No. 55, and discussions with the Department of Public Works and Town Engineer. Storm Water calculations shall be prepared by a Registered Professional Engineer using two methods of calculations. One method shall be as described in USDA Soil Conservation Service Technical Release No. 55. Drainage conveyance systems shall be designed using the larger of two calculation capacities.

a. Piped Systems

- i. The design capacity of the drains shall be determined by the rational method, unless the engineer exhibits satisfactory evidence that another approach is more appropriate for the specific case. The engineer shall design the drainage system in accordance with natural drainage boundaries of the total contributing drainage area.
- ii. Drainage pipe within the roadway shall be reinforced concrete pipe (RCP) or high density polyethylene Corrugated Plastic Pipe (CPP), with appropriate joints as approved by the Town Engineer, and have a minimum diameter of fifteen (15) inches. Catch basin to manhole pipes may be 12 inches in diameter.
- iii. 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 300 feet before it enters the underground system or is diverted off the roadway to ditches or swales. Catch basins shall be located on both sides of the roadway continuous grades at intervals of not more than 300 feet, at all sags in the roadway, and near the corners of the roadway at intersecting streets, to prevent surface water from crossing the intersection.
- iv. Proper connections may be made with any existing public drainage system within 300 feet of the development, if that system has the capacity to

## **Section 4 Design Standards**

---

absorb the flows from the project area, and is permitted by the Town Engineer. Cost of all work in the Town way shall be paid by the Applicant.

- v.No open water body or pond shall be filled in unless; and no wet or swampy area shall be filled in unless; approval has been obtained from the Conservation Commission in accordance with Chapter 131 Section 40 of the Massachusetts General Laws, as amended.
- vi.Where open stream channels exist within a Paper Street Development, adequate provision shall be made for properly protecting and maintaining them. It is the Town's intent to preserve and maintain the natural features of such streams and any development should be planned accordingly. All work shall be done in accordance with Chapter 131 Section 40 of the Massachusetts General Laws, as amended, and the Massachusetts River Protection Act, as amended.
- vii.Drainage pipe shall be bedded in compacted-screened gravel to a depth of 6 inches below the bottom of the pipe in earth. Gravel bedding (not to exceed four minus) shall be carried to the spring line of the pipe. Selected material containing stone no larger than 6 inches shall then be hand placed to an elevation of one (1) foot above the top of the pipe and compacted. Mechanical equipment may be used to backfill the trench above this point.
- viii.Drain manholes shall be located at every change in grade or direction of the drainage line, at catch basin connections, and shall not exceed 300 feet apart in a continuous system.
- ix.Catch basins shall be precast, or other approved by the Town Engineer, cast in place, block and a typical detail noting materials, dimensions, and construction details shall be submitted for approval.
- x.Iron casting for catch basin frames and grates shall be extra heavy in accordance with Massachusetts Department of Transportation Standards. Catch basin grates shall be Type A-1 or A-3.

### **b. Culverts**

In order to replicate the flood control value of undisturbed lands, provide compensatory storage of storm water runoff, the DPW may require the construction of on-site storm water management systems.

- i.the design and construction shall be in compliance with M.G.L., CH. 131 S. 40; as amended.
- ii.the design and construction does not conflict with the Town By laws or Zoning Bylaws of the Town of East Longmeadow.
- iii.the design and construction do not conflict with any other laws, rules and regulations, or standards of any government agency which may have jurisdiction in such matters.
- iv.the location is not in an area such that the sudden release of water, due to failure, would result in loss of life, injury to persons, damage to residences or buildings or cause interruptions of use or service of public utilities.
- v.the design and construction meet the specifications as noted in the Standard Specifications.

## **Section 4 Design Standards**

---

- vi. Culverts to be installed to carry runoff from existing streams shall be designed to satisfy requirements of a one hundred-year storm.
- vii. Proposed culverts and ditches to be installed for street drainage shall be designed to satisfy requirements of a twenty five-year storm.
- viii. All drainage pipes shall be at least 15 inches in diameter and installed with a minimum roadway cover of 4 feet, and shall be pitched no less than .005 feet per one foot; for shallow slopes, a cleansing velocity must be maintained. All drainage structures shall be indicated as to size and location on plan profile sheets. In addition, drawings and calculations showing size of watershed area and quantity of water drained by each culvert that either crosses, or is a part of, the roadway drainage system or Paper Street drainage system shall be submitted. Drainage rights-of-way through lots shall be at least 20 feet wide.
- ix. Class A concrete, stone masonry headwalls, or flared end sections shall be located at culvert ends or as approved by the Town Engineer.

### **4.5 Municipal Services**

#### **1. Water and Sewer Extensions**

If it is the Applicants' intention to connect to the Municipal Public Water and/or Sewer Systems, permits can be obtained at the Department of Public Works. The Applicant must comply with the Massachusetts Department of Environmental Protection Sewer Extension and Connection Permit requirements, 310 CMR7.00. Cost of easements and all work related to the Paper Street Development shall be paid by the Applicant.

#### **2. Fire Hydrant Markers**

Markers showing placement of fire hydrants shall be provided. Markers shall be spring base bolt on fiberglass rod. Markers should also be shown on typical road cross-section.

### **4.6 Landscaping**

Appropriate reseeding and replanting of the non-paved areas of street right-of-ways is a component part of the construction of a Paper Street, and is to be completed by the Applicant.

1. Existing vegetation shall be disturbed to a minimum. Except when necessary to conform to road, driveway and drainage standards or to eliminate blind intersections or poor site lines at curves, major earth movements shall be avoided. Drainage ditches wherever possible shall be graded to resemble natural streams.
2. In construction areas of the right-of-way topsoil shall be removed and spread over land exposed during grading operations. Shoulders and graded slopes shall be seeded on completion, planted with shrubs or given similar approved landscape treatment.
3. Diseased and dead trees within street right-of-ways shall be removed by the Applicant, and healthy existing trees shall be preserved where possible. The Applicant shall provide either by preserving existing trees or planting new

## **Section 4 Design Standards**

---

trees, one tree for each 40 feet of street length, not less than 8 feet tall and 1 ½ inch diameter, on each side of each street, of a species approved by the tree warden and the aerial utilities.

4. No tree or shrub branches that will interfere with corner visibility will be permitted on any street within 30 feet of a corner intersection.
5. The tree belt, "the area from the top of the berm to boundary of the right of way", shall be graded with a minimum of six (6) inches of topsoil and seeded at a grade of +3%. The driveway grade shall be at a slope of +3% within the right of way.

---

# Section 5

## Construction Standards

### 5.1 Basic Requirements

The Applicant shall pay for, provide, and install all of the improvements required herein. All work done under this section shall be done under the direction of the Board, the Town Engineer, and any consultants appointed by the Board. The Applicant, shall promptly reimburse the Town for the full amount of the cost of consultants.

No road constructed for private use may be presented to the Town for acceptance at any time after the effective date of these Rules and Regulations unless constructed in accordance with the terms of these Rules and Regulations.

In addition to the standards specified in the Commonwealth of Massachusetts Department of Transportation: (a) "Standard Specifications for Highways and Bridges current edition, as amended, (to be referred to hereto as the "Standard Specifications"); and (b), "Construction Standards", current edition, as amended (to be referred to hereto as the "Construction Standards", the following minimum specifications shall govern the installation of all roadways, utilities, and other improvements in the Paper Street Development.

### 5.2 Submissions

The following drawings and data shall be submitted for approval prior to the clearing or grading of any land for or the construction of any roadways, etc.:

1. Accurate layout of existing and proposed streets, easements, or rights-of-way including those for utilities and drainage either on or off-site, with accurate bearings and distances including arc length, radii and central angle of all curves.
2. Accurate location of monuments with accurate references to the Massachusetts coordinate system.
3. The location of all existing and proposed stormwater drains, catch basins, bridges, and culverts. Pipe sizes and invert elevations of all drainage structures shall be shown together with outfall into existing sewers or natural watercourses.
4. Road profiles, showing accurate existing and finish grades. A typical cross section of the entire right-of-way and other road construction plans including drainage structures shall also be submitted.
5. Watershed data and calculations for the design of drainage structures.

## **5.3 Roadway Construction Standards**

### **1. Subgrade Preparation**

- a. Within the roadway area including driveway aprons, sidewalks, and grass strips, all loam, organic material, clay and soft material shall be stripped from the line of the streets for the full length and width, to a minimum of four (4) feet excavation depth, unless data is shown to indicate current foundation is sufficient. The prepared subgrade shall be formed as a road box, 15 ½ inches below finished center line grade and 20 ½ inches below finished grade at the edges of the box subgrade.
- b. When fill is placed, it shall be placed and compacted in layers not deeper than twelve (12) inches loose, except the last layer which shall not exceed four (4) inches in depth.
- c. The fill shall be ordinary borrow specified and placed as in the relevant provisions of Section 150 of the Standard Specifications.
- d. The subgrade shall be shaped and finish graded at the required depth below and parallel to the proposed pavement surface.
- e. Upon completion of the subgrade preparation, an inspection by an engineer so appointed by the Town shall be required and in no case shall the gravel base begin until the subgrade preparation has been approved.

### **2. Gravel Base**

- a. The gravel base shall be gravel borrow meeting M1.03.0 Type a specifications, except that the top four (4) inches shall be gravel borrow meeting M1.03.1 specifications.
- b. When spreading the gravel, care should be taken to rake forward and distribute the largest stones so they will be at the bottom of the gravel base course and evenly distributed.
- c. The gravel borrow shall be laid to a depth indicated in the approved Plan.
- d. All gravel base material shall be thoroughly compacted to a minimum of 95% compaction.
- e. The gravel base surface shall be shaped and finish graded at the required depth below and parallel to the proposed pavement surface, in conformance with the approved Plan.
- f. After completion of the gravel base, the Town Engineer shall inspect and in no case shall surfacing of the roadway begin until the gravel base has been approved.

### **3. Surfacing of the Roadway**

The roadway and driveway aprons (edge of road to the right-of-way boundary) shall be paved the entire width, including under the berms, and the surface treatment shall be compacted bituminous concrete placed in two (2) layers.

No paving shall be applied to frozen gravel base, nor shall any pavement be applied when the local air temperature is less than 40°F., or when any form of atmospheric precipitation is occurring.

All bituminous concrete shall be spread by an approved mechanical spreader in a uniformly loose layer to the full width required and to such thickness that each

## **Section 5 Construction Standards**

---

course when compacted shall have the required thickness and shall conform to grade and the approved cross section.

a. **Pavement Binder Course**

The first layer or binder course shall be asphalt concrete of a mix design approved by the Town Engineer, and shall be placed and compacted to a depth of two (2) inches in accordance with Section 420 of the Standard Specifications. All utility castings shall be adjusted flush with binder course surface.

The binder course shall be allowed to set after application for one full winter until the following spring thaw is complete and all the frost in the roadway area has melted and drained off. At that time the Applicant shall request an inspection by an engineer so appointed by the Town and in no case shall the wearing course be applied until the binder course has been inspected and approved.

b. **Pavement Wearing Course**

The wearing course shall be a mixed design approved by the Town Engineer in accordance with Section 460 of the Standard Specifications.

The wearing course shall be rolled to a smooth surface showing no ridges or depressions from the roller, preserving the proper crown to a depth of one and one half (1.5) inches.

All roadways shall be brought up to the elevations as shown on the Paper Street Development Plan, and all access to underground utilities shall be set flush with the surface of the road, grass strip or sidewalk. Inspection of the binder course by an Engineer appointed by the Town before laying of the wearing course is required. A leveling course, if needed, shall be laid as directed by the Engineer before laying the wearing course. Tack coating shall be applied as directed by the Town Engineer.

### **4. Shoulders**

Shoulders shall not be allowed in place of sidewalks, curbs and grass strips, unless permission is specifically granted by the Department of Public Works.

### **5. Curbs/Berms**

- a. Berms shall be constructed with a berm machine. Immediately prior to placement of the berm, the surface of the road receiving the curb shall be coated with an approved bitumen.
- b. All curbs/berms shall be bituminous concrete curb type A (Cape Cod standard specifications provisions on 501).
- c. Berms shall be installed on both sides of all roads.
- d. Under certain conditions, specially constructed berms or gutters may be required by the Department of Public Works.
- e. The berm shall be installed on the binder course of asphalt.
- f. Granite curbing (as specified in Section 501) shall be installed at all intersections.

**6. Sidewalks**

Sidewalks may be placed on one or both sides of the street at a width determined by the Department of Public Works based on the location and need for safe pedestrian circulation. All sidewalks shall conform to the material and construction methods as specified by the Town Engineer or in Section 701 of the Standard Specifications. Sidewalks shall be shown on the Paper Street Development Plan.

**7. Street Signs**

Names of proposed streets shall be as approved by the Department of Public Works to prevent any similarity or duplication of names. Temporary street sign(s) marked "PRIVATE WAY" shall be erected at each intersection at the commencement of construction.

Permanent street signs bearing approved street names shall be provided and installed by the Applicant at his/her expense at all street intersections before acceptance of the roadway and release of the performance guarantee.

**8. Guide Rails**

Guide rails shall be installed as required by site conditions or by the Board, based on State Construction Standards or the publications of the American Association of State Highway and Transportation Officials (AASHTO). Guide rails shall be SS beam, installed according to standard specifications.

**9. Slopes**

Slopes shall be loamed, rolled, fertilized and seeded with an approved grass seed. Applicants shall provide specifications, stabilization, and seeding.

**5.4 Drainage and Drainage Structures**

**1. Responsibility**

The responsibility for adequate drainage shall rest with the Applicant. This shall include the risk involved in connecting with existing drainage facilities (if any) provided by the Town.

Where property adjacent to the Paper Street Development, but within the same watershed, is not subdivided, provision shall be made for proper projection of the drainage systems by continuing appropriate drains and easements to the exterior boundaries of the Paper Street at such size and grade as will allow for such projection. Drainage rights which are appropriate, sufficient, and necessary to handle drainage from the Paper Street Development and adjacent areas shall be secured for the Town.

**2. Groundwater Drainage**

As construction progresses, unforeseen groundwater conditions may be encountered which require additional subdrains or curtain drains. These conditions include potential problems if construction is in progress at a time of low water table or other dry conditions. The Board reserves the right to require appropriate systems to accommodate the problem. The Town reserves the right to use a portion of the cash deposit to rectify any problems not addressed by the Applicant.

**3. Drainage and Drainage Structures**

- a. All roads shall be properly drained and sufficient culverts and catch basins installed in consultation with the Town Engineer. No portion of any road shall drain in one direction more than 300 feet without catch basins on both sides on the road.
- b. Culverts:
  - i. All drainage pipes shall be at least 15 inches in diameter and installed with a minimum roadway cover of 4 feet, and shall be pitched no less than .005 feet per one foot; for shallow slopes, a cleansing velocity must be maintained.
  - ii. Class A concrete, stone masonry headwalls, or flared end sections shall be located at culvert ends or as approved by the Town Engineer.
- c. Catch Basins and Piped Systems
  - i. The construction of the drainage system, including methods of construction and quality of materials used, shall be in conformity with the Paper Street Development Plan and Section 200 of the Standard Specifications.
  - ii. Drainage pipe within the roadway shall be Reinforced Concrete Pipe (RCP) or high density polyethylene Corrugated Plastic Pipe (CPP), with appropriate joints as approved by the Town Engineer, and have a minimum diameter of fifteen (15) inches. Catch basin to manhole pipes may be 12 inches in diameter.
  - iii. Drainage pipe shall be bedded in compacted-screened gravel to a depth of six (6) inches below the bottom of the pipe in earth. Gravel bedding (not to exceed four minus) shall be carried to the spring line of the pipe. Selected material containing no stone larger than six (6) inches shall then be hand placed to an elevation of one (1) foot above the top of the pipe and compacted. Mechanical equipment may be used to backfill the trench above this point.
- d. Sub-Drains
  - i. If subdrainage is required, perforated cement, or Corrugated Plastic Pipe (CPP) shall be used in bedding of  $\frac{3}{4}$  inch to 1  $\frac{1}{4}$  inch washed stone brought to the spring line of the pipe. Filter fabric with the appropriate sieve shall be placed. The remaining trench shall then be backfilled with coarse bank run gravel or coarse sand

**5.5 Utilities Other Than Drainage Structures**

**1. General Standards**

The installation of utilities and underground structures shall conform to the following general standards:

- a. All public and private sewers, surface water drains, water and gas pipes, electric, telephone and Cable TV lines, together with their appropriate structures, within the street right-of-way, shall be placed underground.
- b. All underground utilities shall be installed before the asphalt base course.

## **Section 5 Construction Standards**

---

- c. The location of the utilities shall conform to Paper Street Development Plan.
- d. Material used surrounding and supporting pipes and conduits in the utility trenches shall be screened gravel compacted at least six (6) inches in diameter around pipes, unless the trenches are in ledge, or other unsuitable material which requires eighteen (18) inches of the compacted, screened gravel.
- e. Gravity sewer lines shall be true to line and grade with no horizontal or vertical curvature permitted.
- f. Footing drains, roof drains or storm water drains shall be connected to the storm drainage system.
- g. All underground utilities shall be properly inspected, tested and approval given by respective utility representative and DPW representative before the back filling of trenches and placement of gravel base courses and pavement.
- h. The water and sanitary sewer systems shall be tested and approved prior to installation of gravel.
- i. All lot connections shall be installed to the right-of-way line, and marked or surveyed so as to be easily located in the future. Ties shall be provided to the DPW by the Applicant.
- j. Placement of printed underground tape, designating buried metallic pipe, 12 inches - 18 inches above such pipework.
- k. Placement of printed detectable tape 30 inches - 36 inches below proposed finished grade and above non-metallic pipework.

### **2. Gas**

Gas mains shall be laid along the south and west tree belt and tracing tape placed 12 inches above such pipework. As shown in the Standard Road Section layout and in accordance with specifications of the local Gas Company. In no case shall any pavement of roadway be begun until all gas mains and laterals are completed under affected portion of the roadway.

### **3. Electrical, Telephone and Other Wires**

All electrical, telephone, fire alarm, cable TV and other wires and cables shall be installed underground, unless in the opinion of the Department of Public Works and the appropriate utility company, such installation is impractical or not in the best interest of the Town.

## **5.6 Retaining Walls**

Retaining walls shall be installed on private property where deemed necessary by the Department of Public Works and they shall be designed by a registered engineer.

## **5.7 Monuments/Survey Markers**

- 1. Monuments shall be placed at points of curvature and tangency and angle points of rights of way and easement boundaries.

## **Section 5 Construction Standards**

---

2. Monuments shall be of stone or reinforced concrete, not less than 4 inches square and at minimum, 30 inches long, with a brass or copper plug, drill hole, or cross marking and be set flush with finished grades.
3. All monuments shall be located by a Registered Surveyor and installed by the Applicant at his/her expense.

### **5.8 Final Cleaning**

Upon suspension or completion of the work or any portion thereof, the Applicant shall be responsible for removal from all public or private property all temporary structures, tools and equipment, rubbish or waste materials resulting from his/her operations. All ditches shall be filled, all drains and catch basins cleaned and flushed, streets, walks, curbs and other structures cleaned and repaired and the whole work left in a neat and clean condition.

### **5.9 Trees and Plantings**

#### **1. Existing Trees**

Trees on the site, especially those over eighteen (18) inches in diameter should be preserved. Following is a list of recommended measures for the protection of trees:

- a. There should be no operation of heavy equipment or storage of any materials under said tree within its natural drip line.
- b. No grading or filling should be done within the drip line.
- c. Supplemental irrigation should be provided to all trees as needed during the summer months to insure healthy maintenance.
- d. No black top paving or vehicle parking shall be located under evergreen trees. No more than twenty (20) percent of the area under any deciduous tree's natural drip line may be so paved.
- e. All drainage from paved areas should be directed away from root zones.
- f. Any trees that die within two years of construction must be replaced within one year of their death.

#### **2. Street Trees**

- a. The Applicant is required to plant suitable broad-leaved deciduous shade trees along roads, or ways, unless specifically exempted by the Board. 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.
- b. Acceptable types of street trees may be selected from a list available from the Tree Warden.
- c. Trees shall be at least eight (8) feet tall and with a minimum diameter of one and a half inches one foot from the ground, spaced at intervals of 40 feet. Trees on one side of the street may be set either opposite or diagonally to trees on the opposite side. If overhead wires are present, trees to be planted along the same side as such wires should be planted within the setback area of the property rather than adjacent to the paved way.

## **Section 5 Construction Standards**

---

- d. Planting operations shall be as specified in Section 8, Subsections A, C, E, and F of the Recommended Standard Specifications for Planting Trees, Shrubs, and Vines—Associated Landscape Contractors of Massachusetts.
- e. Requirements for support stakes, guy wire and cable, ground anchors, hose, and wrapping material shall be those contained in Section 6 of the Recommended Standard Specifications for Planting Trees, Shrubs, and Vines, compiled and issued by the Associated Landscape Contractors of Massachusetts, Inc.
- f. The applicant shall be responsible for maintenance of planted trees and replacement of those which have died or become diseased from the time of planting through one full growing season.

### **3. Bank Plantings**

- a. All cut or fill banking that tend to wash or erode shall be planted with suitable, well-rooted, and low-growing plantings. All plants shall be the equivalent of nursery grown stock in good health, free from injury, harmful insects, and diseases.
- b. Suitable planting types shall be submitted to the Department of Public Works for approval. Such plantings shall include very low-growing (4 inches to 12 inches), low growing (12 inches to 30 inches), and herbaceous plantings. Perennial grass turf installed as sod is an acceptable alternative for the planting of banks.
- c. If bank plantings are of a type which is properly spaced at close intervals, 8 inches to 12 inches of loam shall be spread over the entire bank. If the plantings are to be widely spaced they may be planted in loam pits.
- d. Mulch (wood chips or equal) shall be spread heavily among plantings for weed and erosion control.
- e. The applicant shall be responsible for maintenance of bank plantings and replacement of those which have died or become diseased from the time of planting through one full growing season.

### **4. Corner Plantings**

Requirements for plantings adjacent to street intersections shall be the same as those for Bank Plantings with the following exceptions:

- a. Turf may be provided by seeding as well as by planting sod.
- b. Bushy shrubs and herbaceous plantings that would tend to obscure visibility are not permitted within thirty (30) feet of the intersection of the curbs adjacent to the corner lot.

### **5.10 Inspections of Improvements**

Inspections during the work shall be arranged with the Department of Public Works prior to starting construction, who will provide the Applicant with a checklist covering these inspections. The Town Engineer will sign this checklist after satisfactory completion of each step by the Applicant. Inspections shall be requested at least 48 hours in advance of each inspection by notice to the Town's inspector. Inspections shall be made after each step indicated above.

## **Section 5 Construction Standards**

---

All documentation of material types for roadway construction and all weight slips for bituminous material shall be furnished to the Town's inspector on request.

These Rules and Regulations were approved by the East Longmeadow Board of Public Works on March 14, 2011, and any amendments shall take effect upon approval by the Board of Public Works and publication in the East Longmeadow Reminder.