

# **EAST HADDAM SUBDIVISION REGULATIONS**

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## **SECTION 1 - INTENT**

### **SECTION 1.01 AUTHORITY**

These regulations are adopted pursuant to the authority conferred by Chapter 126 of the General Statutes of Connecticut as amended, to the provisions of the State Health Code, as amended, to the provisions of the subdivision regulations, as amended, and to the zoning regulations of the Town of East Haddam, as amended.

### **SECTION 1.02 - PURPOSE**

a) These Regulations are adopted pursuant to the authority granted in Chapter 126, Section 13a-71 of Chapter 238, and Section 7-120 of Chapter 97, of the General Statutes of the State of Connecticut, as amended. It is declared to be the policy of the Commission to consider land subdivision as part of a plan for the orderly, efficient and economical development of the Town so as to further the general welfare and prosperity of its people. Accordingly, it is the purpose of these Regulations to insure that: Land to be subdivided shall be of such character that it can be used for building purposes without danger to health or the public safety; proper provision shall be made for water supply, surface drainage and sanitary sewerage, and in areas contiguous to brooks, rivers or other bodies of water subject to flooding, proper provision shall be made for protective flood control measures; proposed roads shall be in harmony with existing or proposed principal thoroughfares shown in the Plan of Development as the same may be amended from time to time, especially with regard to safe intersections with such thoroughfares, and proposed roads shall be so arranged and of such width as to provide an adequate and convenient system for present and prospective traffic needs, and roads and driveways shall provide adequate access to properties for fire-fighting apparatus and other emergency services; when and in places deemed proper by the Commission open spaces for parks and playgrounds shall be shown on the subdivision plan; proper provision shall be made for soil erosion and sediment control pursuant to Section 22a-329 of the General Statutes of the State of Connecticut; provisions shall be made for energy-efficient patterns of development and land use, the use of solar and other renewable forms of energy, and energy conservation.

b) These Regulations are not intended to interfere with, abrogate, or annul any other ordinance, regulation, or other provision of law, or any easement, covenant, or other private agreement or legal relationship. With regard to any easement, covenant, or other private agreement or legal relationship, however, it is not the purpose of these Regulations to interfere with, resolve, or arbitrate any private civil dispute. When these Regulations impose restrictions different from those imposed by any other statute, ordinance, or other requirement imposed by any level of government, whichever provisions are more restrictive or impose higher standards, shall control.

### **SECTION 1.03 EFFECTIVE DATE**

Subdivision regulations for the Town of East Haddam were first adopted in September, 1960. The current regulations are effective September 13, 2003.

### **SECTION 1.04 AMENDMENTS**

These regulations may be amended by the Commission at a meeting called for that purpose. However, no such amendment shall become effective until after a public hearing has been held in accordance with the General Statutes of Connecticut, as amended. No subdivision or resubdivision plan that has been approved by the Commission prior to the effective date of an amendment to these regulations, and that has been filed or recorded with the Town Clerk shall be required to conform to such amendment until a period of five years from the effective date of such amendment has elapsed.

### **SECTION 1.05 VALIDITY ENACTING CLAUSE, SHORT TITLE AND REPEAL**

The East Haddam Planning and Zoning Commission acting under authority of the General Statutes of the State of Connecticut, hereby adopts and enacts these Regulations as the "Subdivision Regulations of the Town of East Haddam". The provisions of the Subdivision Regulations heretofore in force and any amendments thereof, so far as they are the same as in these Regulations, are to be deemed continued and not as new enactments. Any and all provisions of said Regulations as originally enacted which are inconsistent with the provisions of these Regulations are hereby repealed, but this shall not affect any violations thereof already existing or any penalty incurred and the same may be prosecuted as if these Regulations had not been adopted. If any section, subsection, sentence, or phrase of these subdivision regulations is ruled invalid or unconstitutional, for any reason, by a decree or decision, or by any court of competent jurisdiction shall not affect or impair the validity of any other section or remaining portions of these regulations.

## **SECTION 1.06 CONFORMITY TO ZONING REGULATIONS**

All subdivision plans shall conform to the East Haddam Zoning Regulations in effect at the time of receipt of the Subdivision Application.

## **SECTION 1.07 ENFORCEMENT**

The Commission may designate an individual to serve as the Enforcement Officer to enforce the provisions of these Regulations. The Enforcement Officer may cause any place, premises, or work to be inspected or examined; order the cessation of any work when any condition is found to violate these regulations; and order the remedy of any such condition. The Commission may institute an action or proceeding to prevent or restrain any such work, or to correct or abate any such condition. In addition to any civil or criminal penalties or other remedies as may be provided by law, a violation of these regulations may be enforced by mandatory or other injunctive relief.

## **SECTION 1.08 INDEMNIFICATION OF TOWN AND COMMISSION**

Although these regulations authorize and empower public officials and their designees to inspect premises and work in progress or completed, and to order cessation and re-execution of work where work does not conform to the provisions of these regulations; nothing in these regulations is intended to require any work to be performed under the supervision, direction, or control of the Town, the Commission, or any of their designees; and none of them shall be responsible for any work means, methods, controls, techniques, sequences, procedures, or for construction safety. Each applicant and/or owner of land who consents to an application, as outlined in these regulations, shall be deemed to agree, by making or consenting to such application, to indemnify and hold harmless the Town, the Commission, and authorized representatives, acting within the scope of authority vested by these regulations, from all claims, demands, and liability for any and all personal injuries, damages, losses, and expenses, of whatever kind and nature incurred by any person arising out of or in connection with the performance, correction, re-execution, cessation, or any related delays of work that is part of the subdivision plan approved under these regulations.

## **SECTION 1.09 PENALTY FOR FAILURE TO COMPLY**

a. Failure to Obtain Subdivision Approval. In accordance with Connecticut General Statutes Section 8-25, any person, firm, corporation, partnership or association making the subdivision or re-subdivision of land without approval of the Commission shall be liable to a fine of Five Hundred (\$500.00) Dollars for each lot sold or offered for sale. In the event that any subdivider shall violate these Regulations, or the conditions or requirements of any subdivision approved hereunder, the Commission may, following a public hearing with notice by certified mail to the violator, void, in whole or in part, any such subdivision approval, and may cause notice thereof to be filed in the East Haddam Land Records.

b. Violation of Subdivision Approval. Any person, firm, corporation, partnership or association which violates any provision of these Regulations; or any condition of modification of any Subdivision approval; or fails to comply with the plans and other documentation submitted in accordance with these Regulations; shall be provided notice of such violation by registered mail, return receipt requested. Said notice shall indicate the date of a regular or special meeting at which the Commission shall consider such violation, and the subdivider shall have the opportunity to be heard and present evidence at such meeting. If, following such meeting, the Commission determines that a violation as described in this paragraph has occurred, the Commission may take any or all of the following actions: Void the subdivision for any lots which have not been conveyed to purchasers not affiliated with the subdivider; call any bonds which have been placed to secure compliance with these Regulations and any approval granted hereunder; direct the Zoning Enforcement Officer to withhold any Certificate of Zoning Compliance for such any lot(s) in the subdivision; refuse to accept any public improvement in connection with such subdivision; refuse to grant any extension of time for the completion of improvements in such subdivision; require additional bonding; require additional engineering or other studies to evaluate the scope and nature of the violation; bring legal action seeking injunctive relief or such other relief as may the law or equity appertain.

## **SECTION 1.10 ADOPTION OF A TEMPORARY MORATORIUM**

Section 1.10 Amendment to the East Haddam Subdivision and Zoning Regulation  
Regulation Adopting a Temporary Moratorium on Subdivision Applications

Pursuant to Connecticut General Statutes 8-25 and 8-26, the East Haddam Planning and Zoning Commission hereby enacts the following as Section 1.10 of the East Haddam Subdivision Regulations, *and*

Pursuant to Connecticut General Statutes 8-2 and 8-3, the East Haddam Planning and Zoning Commission hereby enacts the

following as Section 23.10 of the East Haddam Zoning Regulations

a. Purpose East Haddam has experienced a steady continual growth of residential structures that have lead to the fragmentation of forest areas and have impacted watershed areas. *The Plan of Development under Policy A "Encourage Residential Growth at a Slow Rate"* is not being accomplished with the existing regulations. Under Action Program 1: the following directive is given - "*Planning and Zoning Commission continue to reflect and emphasize in its land use policies and decisions, the need to manage residential growth in harmony with the natural resource base*". The fragmentation of forest and loss of important habitats is not in harmony with the nature of East Haddam and is not in compliance with the goals of the Plan of Development. East Haddam has almost 20,000 acres undeveloped and uncommitted acres of vacant land still available for use. East Haddam will be adversely impacted if these areas are not developed in accordance with current policies intended to minimize topographic disturbances, protect surface and subsurface waters, preserve wildlife habitats, avoid exceeding the capacity of the existing and proposed municipal infrastructure, and avoid sprawl.

The Commission therefore finds that a temporary, limited moratorium on subdivision applications and approvals is necessary to allow the Commission to study and revise its regulations in a manner that will allow the most effective and environmentally sensitive division of land and that will enhance the prospects for the conservation of natural resources and the preservation of open space for the welfare of all East Haddam residents and landowners.

More specifically, the Commission will review the Subdivision Regulations in its entirety, the Zoning Regulations that apply to Open Space Subdivisions, bulk and density of residential development, and sections of the Plan of Conservation and Development which relate to the implementation of these regulations.

b. Effective Date November 13, 2002 - The moratorium provided in these Sections 1.10 of the subdivision Regulations and 23.10 of the Zoning Regulations shall take effect upon publication of the notice of adoption of this Section. The moratorium shall remain in effect for a period of six months commencing on the Effective Date, which is November 13, 2002.

c. Application. During the Effective Period of these Sections 1.10 and 23.10, no application for subdivision and application for Special Exception for an Open Space Subdivision per Section 23 of the Zoning Regulation, shall be accepted or approved if the cumulative result of approval of such application, together with any other subdivision applications approved during the Effective Period, would be to divide any parcel of land existing immediately prior to the Effective Date into more than four lots.

d. Exclusions These Sections 1.10 and 23.10 shall not be deemed to apply to any tract for which (1) a subdivision approval that was made prior to the Effective Date expired by lapse of time and (2) an application is filed to subdivide the tract into the same number of lots, or fewer lots, than the Commission had previously approved.

#### **SECTION 1.10 ADOPTION OF A TEMPORARY MORATORIUM - EXTENSION**

The East Haddam Planning and Zoning Commission at a public hearing held May 1, 2003, took the following action:

Approved: An amendment to the East Haddam Subdivision Regulations, to revise a new Section 1.10; and the East Haddam Zoning Regulations to revise a new Section 23.10, the effect of these two amendments being to continue the approved six (6) month moratorium for an additional four (4) months on the acceptance or approval of subdivision applications, or special permits for open space subdivisions, comprised of more than 4 lots, but excluding previously approved subdivisions which have expired by lapse of time or the reconfiguration of existing subdivisions into the same number of lots or fewer.

## SECTION 2 - DEFINITIONS

**ACCELERATED EROSION:** Erosion caused by development activities that exceeds the natural processes by which the surface of the land is worn away by the action of water, wind, or chemical action.

**ACRES:** An acre shall be defined by these regulations as an area of 43,560 contiguous square feet.

**AMENDED SUBDIVISION:** Any change in a property line or improvement shown on a Subdivision or Re-subdivision map which has been approved and filed with the Town Clerk pursuant to these Regulations, other than a new subdivision or a re-subdivision.

**APPLICANT:** Any person, firm, corporation, partnership, association, or appointed agent having an interest in a parcel of land and who applies to the Commission for approval of a subdivision of such land. Consent shall be required from the owner of record of the premises.

**APPLICATION:** A request for approval of a specific subdivision, including an application form as may be prescribed by the Commission, accompanied by all supporting information, document, reports, and the like which may be required by these Regulations.

**BEST MANAGEMENT PRACTICES (BMPs):** Measures, either structural or nonstructural, that are determined to be the most effective, practical means of preventing or reducing point or nonpoint source pollution inputs to stormwater runoff and waterbodies.

**BOARD OF SELECTMEN:** The Board of Selectmen of the Town of East Haddam.

**BOND:** See Section 6.2 of these Regulations.

**BUFFERS/BUFFER STRIPS:** Open spaces, landscaped areas, fences, walls, berms, or any combination thereof used to physically separate or screen one use or property from another so as to visually shield or block noise, lights, or other nuisances or to serve as a filter to protect natural resources from potential adverse impact of adjacent land uses.

**CHANNEL:** A natural or artificial watercourse with a definite bed and banks that conducts continuously or periodically flowing water.

**COMMISSION:** The East Haddam Planning and Zoning Commission

**COMMON DRIVEWAY:** A driveway serving more than one (1) lot.

**CONNECTICUT GUIDELINES FOR SOIL AND EROSION CONTROL:** The most current document entitled "Connecticut Guidelines for Soil Erosion and Sediment Control", including all corrections and revisions, as published by the Connecticut Council on Soil and Water Conservation

**CONSERVATION AREA:** Environmentally sensitive areas with characteristics such as wetlands, floodplains, unprotected elements of the natural landscape such as steep slopes, mature or productive forestland, potential contiguous open space or connective green belts, prime farmland, land that protects critical or threatened natural communities and species as identified by the Department of Environmental Protection, areas that have recreation value as recommended in the Recreation and/or Open Space Plan component of the Plan of Conservation and Development, wildlife habitats, and cultural features such as historic and archeological sites, and scenic views and vistas.

**CONSERVATION DEVELOPMENT:** A form of development that permits a reduction in lot area and bulk requirements, provided there is no increase in the number of lots permitted under a Conventional Subdivision, and the remaining land is dedicated to open space, active recreation, preservation of environmentally sensitive areas, or agriculture.

**CONSERVATION EASEMENT:** Conservation Easement shall mean the grant of a property right transferred to a non-profit or government entity acceptable to the Commission where the landowner retains the legal title and all rights associated with the land except that the land shall remain in its natural state and preclude future development as set forth in the standard "Conservation Easement" approved by the Town of East Haddam, including easements permitting agricultural and forestry uses.

**CONVENTIONAL DEVELOPMENT:** A form of development that permits the division of land in the standard subdivision form provided by these Regulations for the Zoning District in which it is located, other than Planned Residential Development and Conservation Developments.

**CUL DE SAC:** A proposed street, or any extension of an existing street, or any combination or pattern of streets or extensions thereof, having only one outlet to a through State or Town road.

**DATE OF RECEIPT:** The day of the next regularly scheduled Commission meeting immediately following the day of submission of an application, request, or appeal; or 35 days from the date of submission, which ever shall first occur.

**DETENTION:** The temporary storage of storm runoff in a stormwater management practice with the goals of controlling discharge rates and providing gravity settling of pollutants.

**DETENTION BASIN:** A facility for the temporary storage of stormwater runoff to prevent increases in post development runoff from a parcel of land.

**DETENTION FACILITY:** A detention basin or alternative structure designed for the purpose of temporary storage of stormwater runoff or surface runoff and gradual release of stored water at controlled rates.

**DEVELOPMENT FOR AGRICULTURAL PURPOSES:** Development exclusively for use as "agricultural land", as that term is defined in Connecticut General Statutes Section 22-26bb. (See definition of "Subdivision").

**DISTURBED AREA:** An area where the natural vegetative ground cover is destroyed, moved, or removed.

**DRAINAGE EASEMENT:** The right, at any time, to direct the flow of water, whether derived from surface or subsurface sources, across any property owned or proposed to be owned by another. Said right is defined to include direction of the flow of water by any method or means, including but not limited to, unrestricted sheet flows, direction by open ditch or trench, or direction by enclosed conduits. Said right also includes the right to enter upon the property and to maintain said direction of the flow of water in perpetuity.

**EASEMENT:** A right, established in deed or other legal means, of one party to use a designated portion of a second party's land for a specific limited purpose.

**EROSION:** The detachment and movement of soil or rock fragments by water, wind, ice or gravity.

**FINAL SUBDIVISION PLAN:** The final map, drawings, and all supporting data required by these Regulations upon which the subdivider's plan of subdivision is presented to the Commission for action and which, if approved without modifications, would be submitted to the Town Clerk for recording, where such recording is required by these Regulations.

**HOTSPOTS:** An area where land use or activities generate highly contaminated runoff, with concentrations of pollutants in excess of those typically found in stormwater.

**HYDRAULIC STUDY:** Maps and computations related to the watershed area that includes *any* portion of the subdivision, as prepared by a Connecticut Registered Professional Engineer. This study is for the purpose of determining storm water capacity of storm sewer pipes, culverts, drainage ditches, retention structures, wetlands, watercourses, and other natural or man-made destinations of storm water.

**HYDROLOGIC SOIL GROUP (HSG):** A Natural Resource Conservation Service classification system in which soils are categorized into four runoff potential groups. The groups range from A soils, with high permeability and little runoff production, to D soils, which have low permeability rates and produce much more runoff.

**IMPERVIOUS COVER:** Those surfaces that cannot effectively infiltrate rainfall (e.g., building rooftops, pavement, sidewalks, driveways, etc).

**IMPROVEMENT:** Any change or alteration to the existing conditions of the subdivision site *or* of public streets or other property for the purpose of complying with these Regulations or rendering the site more suitable for development and/or habitation. As used in these Regulations, improvements include but are not limited to: construction and installation of roadways, paved or gravel streets, curbs, gutters, snow shelf, utilities, street signs, monuments, shade trees, drainage facilities, erosion and sedimentation control measures, buildings, earth filling or removal, seeding, and grading.

**INDUSTRIAL STORMWATER PERMIT:** An National Pollutant Discharge Elimination System permit issued to a commercial industry or group of industries which regulates the pollutant levels associated with industrial stormwater discharges or specifies on-site pollution control strategies.

**INFILTRATION:** The process of percolating stormwater into the subsoil.

**INFILTRATION FACILITY:** Any structure or device designed to infiltrate retained water to the subsurface. These facilities may be above grade or below grade.

**INLAND WETLANDS AGENCY:** The agency acting as the East Haddam Inland Wetlands and Watercourses Commission.

**HALF STREET:** A proposed street, or any extension of an existing street, along and roughly parallel to a property line such that less than the entire required right-of-way and street improvements, longitudinally, would be located on one property.

**LAND DISTURBANCE ACTIVITY:** Any activity which changes the volume or peak flow discharge rate of rainfall runoff from the land surface. This may include the grading, digging, cutting, scraping, or excavating of soil, placement of fill materials, paving, construction, substantial removal of vegetation, or any activity which bares soil or rock or involves the diversion or piping of any natural or man-made watercourse.

**LOOP DRIVEWAY:** A driveway, serving more than one (1) dwelling, which starts and ends on a Town or State street, and typically parallel to a street and running across the front portion of the lots.

**LOT:** The unit or units into which land is divided with the intention of offering such units for sale, lease conveyance, or transfer; either as undeveloped or developed sites, regardless of how they are conveyed. Lot shall also mean parcel, site, or any similar term.

**LOT, BUILDING:** A lot capable of supporting a building, and on which all utilities required for habitation, such as water supply and sewage disposal, are available to the lot or on-site.

**LOT, INTERIOR:** A parcel of land that is situated generally behind lots fronting on a street that does not have the frontage required by the Zoning Regulations and that is accessible from the street only over an access strip.

**MONUMENT:** A granite or reinforced concrete post installed to designate the legal limits of a street right-of-way or other boundary of Town owned land.

**OPEN SPACE:** Land or water areas which include but are not limited to: areas left in their existing state; agricultural land for which development rights have been assigned or otherwise alienated in perpetuity; areas and facilities for non-commercial, non-profit recreation, areas for wildlife habitat, passive and active recreation, groundwater recharge, scenic preservation, and other lands accomplishing the purpose set forth in Section 4.9 of these regulations.

**PEDESTRIAN WALK:** A right-of-way dedicated to public use to facilitate pedestrian access through a subdivision and/or to a public facility such as a school or a park.

**NONPOINT SOURCE POLLUTION:** Pollution from any source other than from any discernible, confined, and discrete conveyances, and shall include, but not be limited to pollutants from agricultural, silvicultural, mining, construction, subsurface disposal, and development runoff sources.

**PERFORMANCE BOND:** A bond, furnished to the Town by the developer, to be used to complete subdivision improvements if the developer does not complete the improvements as promised, as required, and/or as indicated in the application. See Section 6.2.

**PLAN AND PROFILE:** The drawing(s) depicting respectively the horizontal and vertical design for street construction and drainage, and containing all information required by Section 3 of these Regulations. See Section 3.04

**PRELIMINARY LAYOUT:** The preliminary drawing(s) and all required supporting data as required by Section 3 of these Regulations, indicating the proposed manner and layout of the subdivision to be submitted to the Commission for consideration.

**PRINT:** A blueprint, Photostat, lithoprint, or other copy which reproduces exactly the data on the original drawing(s) from which it is made.

**PLAN OF CONSERVATION AND DEVELOPMENT:** The Plan of Conservation and Development is a master plan for the most desirable use of land for residential, recreational, commercial, industrial, open space preservation, resource protection, and other purposes; and contains the Commission's recommendations for population density, streets and other public ways, municipal development, public utilities, public housing, and redevelopment; pursuant to Chapter 126 of the General Statutes of Connecticut, as amended.

**RECHARGE:** The replenishment of subsurface water reserves.

**RESERVE STRIP:** Land controlling public access to an area dedicated or to be dedicated to public use, including streets, street connections, pedestrian ways, parks, or other land dedicated to public use.

**RESUBDIVISION:** A change in a map of an approved or recorded subdivision or resubdivision if such change: a) affects any street layout shown on such map; b) affects any area reserved thereon for public use; or c) diminishes the size of any lot shown thereon and creates an additional building lot, if any of the lots shown thereon have been conveyed after the approval or recording of such map.

**RIGHT-OF-WAY**

a) The parcel of land between street property lines, which are defined as the limits of land dedicated, secured or reserved for public transportation uses.

b) A narrow strip of land used to gain access to a parcel of land that does not have access to a street right-of-way. Right-of-way is usually owned in fee by the party having the right to use it.

**ROAD:** Same as "Street" as defined in these regulations.

**SANITARIAN:** The Chatham Health District, or its designee or successor agency.

**SEDIMENT:** Solid material, either mineral or organic, that is in suspension, is transported, or has been moved from its site of origin.

**SETBACK LINES (BUILDING LINE):** A line, usually fixed parallel to the lot line, beyond which a building cannot extend under the terms of the Zoning Regulations.

**SOIL AND EROSION CONTROL CERTIFICATION:** A signed written approval by the Commission that a soil erosion and sediment control plan complies with the applicable requirements of these Regulations.

**SOIL EROSION AND SEDIMENT CONTROL PLAN:** A plan that minimizes soil erosion and sedimentation resulting from development and includes, but is not limited to, a map and narrative.

**SOILS MAP:** The officially adopted soils classification of the Town of East Haddam prepared by the U.S. Department of Agriculture, Natural Resources Conservation Service and published as the Middlesex County Soil Survey.

**STORM WATER MANAGEMENT:** The use of structural or non-structural practices that are designed to reduce storm water runoff pollutant loads, discharge volumes, and peak flow discharge rates. See Section 4.02.

**STORMWATER RUNOFF:** The flow on the surface of the ground, resulting from precipitation.

**STREET:** A road, avenue, lane, or any right-of-way: (a) dedicated and legally accepted by the Town or the State of Connecticut for the purpose of public travel; OR (b) shown on a subdivision map duly approved by the Commission and complying with all requirements of these Regulations, recorded in the Office of the Town Clerk, and bonded or constructed in accordance with these Regulations.

**STREET, ABANDONED:** A Street believed to be a Public Street at some time in the past, but which has not been maintained by the State of Connecticut or the Town of East Haddam for such a period of time, and which has so deteriorated in its capacity to support public vehicular traffic, so as to evidence an intent to terminate the status of the street as a Public Street. Status as an abandoned Street shall be determined by the East Haddam Board of Selectmen as provided in the Connecticut General Statutes.

**STREET, DISCONTINUED:** A Street that has been removed from the Town's system of accepted streets through formal action at a Town Meeting.

**STREET LINE:** The limit or property lines of the street right-of-way. Where such line has not been established, it is deemed to be a line parallel to and 25 feet distant from the center line of the traveled section of the pavement for the purposes of these Regulations.

**STREET, LOOP:** A Street which commences at an intersection with a through street and terminates at an intersection with the same through street. Sometimes referred to as a "horseshoe" street.

**STREET PAVEMENT:** The wearing or traveled surface of the roadway used by vehicular traffic.

**STREET, PRIVATE:** A Street which is not open to the general public for highway purposes, which is maintained by an association of the lot owners served or benefited by such Private Street, and which is contained within a subdivision which has been approved in accordance with these Regulations.

**STREET, PUBLIC:** A street accepted by legal procedure and maintained by the Town of East Haddam or the State of Connecticut as a public highway. "Public Street" does not include Abandoned Streets or Discontinued Streets.

**STREET, THROUGH:** A Connecticut State Highway, or a Public Street upon which a vehicle proceeding in either direction would be capable of reaching a separate Connecticut State Highway or Public Street of the Town of East Haddam or of an adjoining Town.

**STREET WIDTH:** The distance between Street Lines.

**SUBDIVIDER:** See, "Applicant".

**SUBDIVISION:** The division of a tract or parcel of land into three (3) or more parts or lots, made subsequent to the adoption of Subdivision Regulations in September, 1960; for the immediate or future purpose of sale or building development, and includes resubdivision. For purposes of this definition, a division of a tract or parcel of land under one ownership in September, 1960; into three (3) or more parts or lots shall be considered a subdivision whether such division was effected simultaneously, or successively by a single owner or by several successive owners of the tract or parcel of land.

**SUBDIVISION EXPIRATION DATE:** See the Connecticut General Statutes Section 8-26c.

**SUBDIVISION PLAN:** The final subdivision layout, plans, and all other required and supporting data that is presented to the Commission for approval; plus any additional data, representations, assurances, or other written or verbal statements made to the Commission during the course of the hearing on the Subdivision.

**TOWN:** The Town of East Haddam, Connecticut.

**TOWN ENGINEER:** The designated Town Engineer or engineering consultant to the Town of East Haddam acting personally or through assistants authorized in writing for such acts by the Engineer.

**TRAVEL WIDTH:** The distance between curb faces or the paved width of the street in the absence of curbs.

**WATERCOURSES:** Watercourses are the areas identified and defined in Section 22a-38 of the General Statutes of Connecticut, as amended. "Watercourses" means rivers, streams, brooks, waterways, lakes, ponds, marshes, swamps, bogs, and all other bodies of water that are contained within, flow through, or border upon any portion of this State; whether natural, artificial, public, or private; but does not include any tidal waters.

**WETLANDS, INLAND:** Wetlands are the areas identified and defined in Sections 22a-38 of the General Statutes of Connecticut, as amended; and officially delineated by the Inland Wetlands and Watercourses Agency. "Wetland" means land that consists of any of the soil types designated as poorly drained, very poorly drained, alluvial, and flood plain by the National Cooperative Soils Survey, as amended, of the USDA Soil Conservation Service; and includes submerged land, but not tidal wetlands.

**WETLANDS, TIDAL:** Wetlands as identified and defined in Section 22a-29 of the General Statutes of Connecticut.

**WATER QUALITY VOLUME (WQV):** The volume of runoff generated by one inch of rainfall on the site. See Section 4.06

**ZONING ENFORCEMENT OFFICER (ZEO):** The East Haddam Planning and Zoning Commission Zoning Enforcement Officer.

**ZONING PERMIT:** An official finding that a planned use of a property, as indicated by an approved application, complies with the Zoning Regulations or meets special conditions of a variance or special permit; the Zoning Regulations may also specify additions or alterations that are required for a Zoning Permit.

**ZONING REGULATIONS:** The current adopted East Haddam Zoning Regulations.

## SECTION 3

## SUBDIVISION PROCEDURES AND APPLICATION

### **3.01 REQUIREMENT OF APPROVAL OF SUBDIVISION PLAN**

Application for approval of a plan of subdivision shall be made to the Commission pursuant to Section 8-26 of Chapter 126 of the Connecticut General Statutes, as amended.

- a) Subdivision Plan Approved and the Sale of Lots. All plans for the subdivision or re-subdivision of land must be submitted to the Commission for approval and no lot resulting from or affected by the subdivision or re-subdivision of any tract or parcel of land shall be sold or offered for sale or use for building development and no Certificate of Zoning Compliance (Zoning Permit) for any use, nor any building permit for the erection or enlargement of any building on such lot shall be granted without the prior approval of the subdivision or re-subdivision plan, or any amendment thereof, by the Commission, and the filing of the endorsed Final Subdivision Plan in the Office of the Town Clerk.
- b) Amended Subdivision. An amended subdivision may be approved by the Commission with or without a public hearing. All provisions of the original approved subdivision or re-subdivision shall be complied with, except as specifically approved by the Commission. No amended subdivision shall be deemed final until an endorsed Final Subdivision Plan has been filed in the Office of the Town Clerk.
- c) Purpose of Recommended Preliminary Procedure. Before submitting an application which must comply with the requirements of these Regulations including requirements for a Final Subdivision Plan, the preliminary procedure recommended should be followed to save time and expense. Prior to submission of an application for approval of a Conventional Subdivision or Conservation Subdivision, the applicant should initiate a pre-application conference with the Commission and its staff to discuss conceptual aspects of the proposed plans and prepare and present a preliminary layout for informal consideration by the Commission. The pre-application conference is recommended to permit the general consideration of factors and problems affecting the development of the subject site before the applicant proceeds with the application and the preparation of final maps, plans and documents required to accompany such application. This is a recommendation and not a requirement. A letter requesting consideration of the application under "Preliminary Layout" shall be submitted by the Applicant with the application.

### **3:02 GENERAL PRINCIPLES OF LAND SUBDIVISION**

The following principles and standards are consistent with good subdivision design when applied to the rural, low density of population character of the Town. It is not the intent of the Commission to establish a rigid form of design, but rather to give the applicant freedom to lay out the property into a safe, sanitary, and desirable residential development, while achieving a benefit to himself, to the ultimate residents and to the Town itself. The subdivision plan must conform to the following requirements:

- a) The Subdivision Map.
  - i) Shall conform to all requirements for filing with the Planning and Zoning Commission and the Town Clerk as part of the Land Records of the Town.
- b) The Property.
  - i) On land contiguous to brooks, rivers or other bodies of water subject to flooding, proper provision shall be made by the developer for protective flood control measures in connection with the applicable provisions of the Zoning Regulations. Land subject to flooding and land otherwise deemed by the Commission to be unsuitable for residential use because of hazard to health, safety or property, shall not be subdivided for residential occupancy or for any use which might increase the hazard.
  - ii) When the proposed subdivision covers only a part of an existing tract or only a part of the subdivider's holding, a sketch of the prospective future street system of the remainder of the holding or tract shall be submitted. In reviewing the proposed subdivision, the Commission shall consider both the proposed subdivision and the remainder tract and their relationship.
- c) Consideration of Conservation Plan and use of the four step development process.
  - i) The applicant shall use the four step process to create the proposed Conventional and Conservation Subdivisions. This process shall be demonstrated with a site plan and detailed narrative. The design process identifies historical, cultural and natural resources, potential open space corridors, views and vistas, sensitive wildlife areas, Conservation Areas, and other areas that should not be adversely impacted by development.

### Step One: Identifying Conservation Areas

Conservation Areas limited to regulatory jurisdiction such as wetland and floodplains; and Conservation Areas including those unprotected elements of the natural landscape such as steep slopes (20% or greater), mature or productive forestland, potential contiguous open space or connective green belts, prime farmland, land that protects critical or threatened species or communities of special concern as identified by the Department of Environmental Protection, areas that have recreation value as recommended in the Recreation and/or Open Space Plan component of the Plan of Development; wildlife habitats, and cultural features such as historic and archeological sites; and scenic views and vistas. This phase will require the property boundary to be located, the wetland areas delineated, and the services of professionals such as a biologist and/or a landscape architect to determine the potential Conservation Area.

### Step Two: Locating Developable House Sites

The second step involves locating approximate house sites on suitable soils outside of the Conservation Areas. Random soil testing throughout the property in a grid of approximately 200 feet apart will give a general indication of the areas suitability for development.

### Step Three: Aligning Streets and Driveways

The third step consists of tracing a logical alignment for the location of streets to serve the house sites, which street pattern is in harmony with the natural topography to minimize cuts and fills.

### Step Four: Drawing in the Lot Lines

The final step is to draw in the lot lines.

### **3.03 PRELIMINARY LAYOUTS**

- a) Application. The Subdivider, hereinafter sometimes called the Applicant, may present to the Commission a request for the consideration of the Preliminary Layouts. Six (6) paper prints of each of the Preliminary Layouts (Conventional versus Conservation), in accordance this Section 3.03.h of these Regulations, shall be submitted with the request.
- b) Technical Reports. The Applicant shall obtain from a licensed professional engineer a written report or reports as to the general feasibility of the following: The proposed water supply, and the proposed drainage plan and sewage disposal in the area to be subdivided, and shall deliver said report(s) to the Commission. The Applicant shall demonstrate where the proposed development fits within the watershed, i.e. regional, subregional, and local drainage basins. The applicant shall cause to be performed, at his expense, such tests as the appropriate Town officer or officers may request. The Commission may request such other report(s) as are deemed advisable.
- c) Check by Commission. At the time of the filing of a request for the consideration of the Preliminary Layouts, the Commission or its designee shall check such request and layouts and when the information contained in said request is substantially complete in accordance with this Section of these Regulations, the matter shall be placed on the agenda for a regular public meeting of the Commission. The applicant's agents shall certify that the information contained in the request and layouts is true and correct and meets the requirements of these Regulations and any other applicable town or state regulations. Whenever desirable, the Commission and/or its representative(s) may examine the site of the proposed subdivision with the applicant or his authorized representative(s), prior to said meeting, and the applicant, by making a request under this Section, shall be deemed to consent to such site examination.
- d) Notice of the Meeting of Commission. The Commission shall notify the applicant, prior to said meeting, of the date, time and place of the meeting of the Commission at which the Preliminary Layouts is to be considered and the applicant, or his fully authorized representative, should attend said meeting unless he has notified the Commission at least one day prior to said meeting of his inability to attend. All Preliminary Layout and reviews require the property to be posted with notice of such meeting. The requirements of such notification are explained in Section 4.20 General Requirements
- e) Consideration of the Preliminary Layouts. The Preliminary Layouts will be considered at a regular public meeting of the Commission at which it is on the agenda. The Commission may hold a public hearing on any such request, and even in the absence of a public hearing, may, in its sole discretion, permit persons to be heard and written communications received at such meeting. The purpose of entering information from the public is to gather certain information such as environmental, historical, and archeological factors that may assist the Commission and applicant in the decision making process.
- f) The Commission shall have the right to recommend the subdivision method (Conventional or Conservation) based on the information provided in the preliminary layouts provided by the applicant and from comments generated from other Commissions, Boards, Agencies, and the public.
- g) Effect of Consideration of Preliminary Layouts. The purpose of the consideration of the Preliminary Layouts is to provide preliminary guidance to the Applicant, and to identify areas of concern or further study, so as to minimize delay, expense and inconvenience to the public, the Applicant, and the Commission upon the future receipt, if any, of a formal application for subdivision. Neither the applicant nor the Commission shall be in any way bound by any statement made during such Preliminary Layout consideration, nor shall the statement of any Commission member be deemed to be an indication of pre-judgment or prejudice, it being acknowledged by the applicant that the Commission's responses, like the request itself, are preliminary and subject to further change and refinement. There shall be no vote or other formal action on any request for Preliminary Layout consideration, other than referrals to other municipal, State, or Federal agencies for review and comment if deemed advisable by the Commission.
- h) Preliminary Layouts submitted to the Commission should be drawings or prints of drawings produced by a landscape architect, engineer, or surveyor at a scale of one inch equals forty feet (1"=40') or one hundred (100') feet on sheets twenty-four by thirty-six inches (24"x36") in size. It is recommended that on complex projects that, at the minimum, the services of an landscape architect, engineer, surveyor, and biologist be contracted as part of the project team for presentation. The Preliminary Layout shall contain the following information:
- i). Names of owners of record and proposed subdivider, proposed subdivision name and identifying title, location of subdivision, approximate north arrow and scale and date of drawing.
- ii). Location and approximate dimensions of all existing property lines of the subdivision including assessor's block and parcel numbers.

- iii). All pertinent features, such as existing structures, stone walls, foundations, easements, wetlands, watercourses, swampland and wooded areas, and proposed Conservation Areas properly labeled.
- iv). Approximate contours of the existing surface of land, with intervals adequate to indicate drainage and grades.
- v). Proposed lot lines with approximate dimensions and area of all proposed lots
- vi). Location and approximate dimensions and area of all property proposed to be set aside for open space, playground or park use.
- vii). A reference map to the scale of one inch equals one thousand feet (1"=1000') showing the proposed subdivision and tie-in to the nearest street intersection. If the application submitted covers only a part of the applicant's holdings, a map which may appear on the same sheet, drawn on a scale no less than one inch equals two hundred feet (1"=200') showing an outline of the plotted area with its proposed road system and an indication of a proposed future road system and lot layout for the remaining portion of the tract.
- viii). A set of maps demonstrating how the four step conservation development process of Section 3.02 was used.
- ix). Where the subdivider anticipates that the Subdivision will be developed in phases, such phases should be delineated on the Preliminary Layout.
- x). Mapping and a narrative describing the use of the four step development process for a Conventional and Conservation Plan.
- xi). Maps indicating where the development exists in relationship with the watershed, i.e. regional, subregional, and local basins.

#### **3.04 FINAL SUBDIVISION APPLICATION**

- a) Filing of Final Subdivision Application. Any Applicant seeking Subdivision approval shall file in the office of the Commission the following (in duplicate, unless otherwise noted). If the Applicant does not participate in the preliminary application process, the applicant shall submit full sets of a Conservation and Conventional Subdivision Plan. The Commission shall have the right to choose the subdivision method (Conventional or Conservation) based on the information provided by the applicant and from comments generated from other Commissions, Boards, Agencies, and the public:
  - i). An application on forms provided by the Commission, signed by the applicant and also the owner of the land to be subdivided or his authorized agent;
  - ii). A non-refundable application fee, in the form of a check made payable to the Town of East Haddam per the Town Fee Ordinance;
  - iii). Ten (10) prints of a Final Subdivision Plan conforming to these Regulations;
  - iv). Ten (10) prints of a Plan and Profile drawings for each street conforming to these Regulations. (Scale: 1" = 40' horizontal, 1" = 4' vertical);
  - v). Three copies of a Hydraulic Study and Stormwater Control Plan conforming to these Regulations;
  - vi). Ten (10) prints of an Erosion and Sediment Control Plan, in accordance with the 2002 Connecticut Guidelines for Soil and Erosion Control as amended. The plan shall relate only to proposed improvements.
  - vii). Ten (10) prints of a Final Subdivision Plan conforming to these Regulations reduce to 11" x 17" for distribution to the Commission and public;
  - viii). A final report from the Sanitarian indicating that each and every lot proposed on the Final Subdivision Plan meets the sanitary requirements as defined in Section 4.04; or, if the applicant proposes to utilize a community sewerage system, as defined in the Connecticut General Statutes Section 7-245, a report from the East Haddam Water Pollution Control Authority indicating that all requirements of the Connecticut General Statutes Section 7-246f have been satisfied;
  - ix). A report from, and evidence of approval by, the Inland Wetlands and Watercourses Commission of any permits required pursuant to the East Haddam Inland Wetlands and Watercourses Regulations for the Final Subdivision Plan as submitted; and,

in addition, written evidence of a preliminary review of the proposed activities depicted on the Final Subdivision Plan by the U.S. Army Corps of Engineers or Department of Environmental Protection where required by applicable law.

x). In accordance with Section 8-25a of the Connecticut General Statutes, as amended by Public Act 84-330, any subdivision providing water by means of a "water company", as that term is defined in Connecticut General Statutes Section 16-262m(a), shall provide to the Commission a certified copy of a resolution from the Board of Selectmen agreeing that the Town of East Haddam through the East Haddam Water Pollution Control shall be responsible for the ownership and operation of the subject water company as required by the Department of Public Utility Control Regulations (DPUC) and that a Certificate of Public Convenience and Necessity is issued by the DPUC.

xi). A written, itemized estimate, prepared and sealed by the applicant's Connecticut Registered Professional Engineer, of the cost of installation of any and all Improvements depicted on the Final Subdivision Plans or required by these Regulations. Such written estimate shall contain a detailed analysis of the materials and services required, the cost per unit, and such other information as the Town Engineer may require to facilitate his/her review of the estimate. The Town Engineer shall review the estimate, and make a recommendation to the Commission that it be accepted with or without modifications.

xii). Each sheet of the Final Subdivision Plans shall contain a printed signature box as follows;

Approved by the East Haddam Planning and Zoning Commission  
Chairman/Secretary \_\_\_\_\_ Date: \_\_\_\_\_  
Expiration Date: \_\_\_\_\_

xiii). Where the proposed subdivision includes only a portion of an existing tract, or only a portion of the applicant's property, a preliminary plan of the future street and lot pattern for the remainder of the tract or property shall be submitted.

xiv). Where existing topography is proposed to be altered, the volumes of material to be removed from, or brought onto, the site; areas of proposed blasting, and the estimated volume thereof; the location to which excavated material being removed from the site will be deposited, if known, and the time within which such removal is anticipated to occur.

xv). A description of any existing deed restrictions, covenants, easements, rights-of-way, or similar encumbrances which run with the land, including the identity of the dominant and servant estates, the volume and page of the East Haddam Land Records where the same are recorded, and the date upon which they will expire, if any.

xvii). The name, address, responsible loan officer of the holder, and volume and page of recording, of any mortgage deed secured by the property to be subdivided.

xviii). A parcel history map, depicting the tract as of the effective date of the adoption of subdivision regulations for the Town of East Haddam (September 5, 1961). Such map shall be at a scale of 1" = 200', more or less, and shall indicate all divisions of the property, or any property of which was formerly a part, since the said effective date of subdivision regulation in East Haddam and a table containing the dates of such divisions and the grantors and grantees of any parcels or approved subdivisions so created.

xix). In accordance with C.G.S. §8-3i, in any subdivision application for any property which is within the watershed of a water company, as defined in C.G.S. §16-1, the applicant shall provide written notice of the application to the water company, provided such water company has filed a map showing the boundaries of the watershed on the land records of the Town. Such notice shall be by certified mail, return receipt requested, and shall be mailed at the time of application. The applicant shall submit evidence of such notice to the Commission at the time of application.

xx). It is the burden of the applicant to submit a complete application, and to demonstrate compliance with all criteria and requirement of these Regulations and, accordingly, the applicant may submit, or the Commission may require, such additional reports or information as may be required to satisfy that burden. Any application found to be incomplete may be denied by the Commission without prejudice to a future, complete application.

xxi). The filing of an application with the Commission shall be deemed to constitute permission by the applicant for the Commission or its agents to enter onto the subject property for the purpose of inspections and tests; and, if the Commission designates a formal site walk through the public hearing process, such permission shall allow the general public, in company with the Commission, to inspect such property.

b) Technical Approval or Report. In addition to the above, the applicant shall provide from a licensed professional engineer a written report of the adequacy of the water supply and sewerage arrangements, and from a licensed professional engineer and land surveyor of the proposed grades, drainage arrangements and drainage easements as shown on the Plan-

Profiles and the Final Subdivision Plan. The Applicant, at the request of the Commission, shall provide a traffic report. The applicant shall also obtain from the appropriate Town officers such other reports as the Commission may require. Where significant environmental or historical impact may be involved, the Commission may request a review of the application by the East Haddam Conservation Commission, East Haddam Historic District Commission, Midstate Regional Planning Agency, Connecticut River Coastal Conservation District, appropriate agencies in adjacent municipalities which may be affected by the proposed activity, or other technical agencies; or may undertake additional studies or investigations.

c) Receipt by Commission. Following the Date of Receipt of the Application for Final Subdivision in the Planning Office, the Commission shall place the matter on the agenda of its next regular meeting for acknowledgment, provided the complete Application is received in the proper form at least one (1) week prior to such meeting. If the aforesaid time requirement is not met, the Plan shall be held for the following public meeting of the Commission. Regardless of the appearance on the Commission's agenda for acknowledgment, the legal date for the receipt of the application shall be in accordance with the Connecticut General Statutes.

d) Notice of Meeting of Commission. The Commission shall schedule a public hearing as provided by Statute on any application for Final Subdivision. Any such public hearing shall commence no later than sixty-five (65) days following the Date of Receipt of the application, and shall be completed no later than thirty-five (35) days following its commencement. Upon written approval by the applicant, said time limitation may be extended by the Commission one or more times, provided the total period of any such extension or extensions shall not exceed 65 days in total. All final subdivision applications require the property to be posted to notice of such meeting. The requirements of such notification are explained in Section 4.20 General Requirements.

e) Notices Mandated by Statute. In accordance with C.G.S. §8-26b, any proposed subdivision which will abut or include land in another municipality, shall be referred to the regional planning agency or agencies of the region in which the other municipality or municipalities is/are located, prior to action on such subdivision application.

In accordance with C.G.S. §8-26f, the Commission shall notify the clerk of any adjoining municipality of the pendency of any application concerning any subdivision in which (1) any portion of the property affected is within five hundred (500') feet of the boundary of the adjoining municipality; (2) a significant portion of the traffic to the proposed subdivision will use streets within the adjoining municipality to enter or exist in the subdivision; (3) a significant portion of the sewer or water drainage from the subdivision will flow through or significantly impact the drainage or sewerage system within the adjoining municipality; (4) water run-off from the subdivision will impact streets or other municipal or private property with the adjoining municipality. Such notice shall be made by certified mail and shall be mailed within seven (7) days of the receipt of the subdivision application, and no public hearing shall be held on any subdivision application unless or until such notice has been received. The adjoining municipality may, through a representative, appear and be heard at any hearing on such application.

f) Consideration of Final Subdivision Application. The Commission will study the Final Subdivision application and all accompanying reports and other documents, and any new information or changed conditions which might necessitate alteration of the application, provided, however, that, in those cases where a public hearing has been held, the Commission shall receive no further testimony or information, orally or in writing, in public or in private, once the public hearing has been closed, other than from the Commission's staff, including its engineer, or disinterested Town, State, or Federal agencies, advisors, or officials.

g) Action by the Commission. Within sixty-five (65) days from the close of the public hearing, the Commission shall take action on the Final Subdivision application. Such action shall consist of approval, modification and approval, or disapproval of the application. "Modification", as used in this Section, may include conditions which must be satisfied prior to endorsement and filing of the Final Subdivision plans, prior to the issuance of Certificates of Zoning Compliance, prior to the release of bonds, or at other appropriate points in time. Upon written approval by the applicant, said time limitation may be extended by the Commission one or more times, provided the total period of any such extension or extensions shall not exceed the original time period. In addition, in the case of any application involving an activity regulated under the Inland Wetlands and Watercourses Regulations, the time limit for action shall be extended to thirty-five (35) days following a final decision on such activity by the East Haddam Inland Wetlands and Watercourses Commission if for any reason the report of the said Commission was not received at the time of application, or required updating due to changes in the application during its pendency.

h) Notification of Action. Within fifteen (15) days after action by the Commission, the Commission shall notify the applicant and all adjoining landowners who shall have requested notice in writing, of the action taken by the Commission. Such notice shall be by publication in a newspaper of general circulation in the Town of East Haddam and by sending a copy thereof by registered or certified mail to the applicant, and by regular mail to the aforesaid adjoining landowners, on or before the date of publication. Such notice shall be a simple statement that such application was approved, modified and approved,

or disapproved, together with the date of such action. Any person aggrieved by the official action of the Commission may appeal there from within fifteen (15) days of publication of notice of such official action to the Superior Court, as provided by Statute.

i) Endorsement of Final Subdivision Plan. Upon approval of an application, the applicant shall, within sixty-five (65) days of approval, provide a Final Subdivision Plan on a material suitable for filing in the office of the East Haddam Town Clerk, which Plan shall incorporate any modification attached to such approval, and shall be accompanied by any documents required by these Regulations, such as bonds, road deeds, liens, conservation and drainage easements, and the like. Any conveyance to the Town of East Haddam shall be accompanied by a current Certificate of Title, prepared by an attorney admitted to the bar of the State of Connecticut, and certifying that such conveyance is free and clear of, or subordinated to, any mortgage, lien, restriction, or other encumbrance.

The Plan for filing shall include, reproduced on the face thereof, a copy of the motions of approval (including any conditions or modifications made a part thereof) from both the Planning and Zoning Commission's subdivision approval and any Inland Wetlands Permit approved by the East Haddam Inland Wetlands and Watercourses Commission. Not more than thirty (30) days after the expiration of the time for taking an appeal from the approval of the subdivision has lapsed, or, in the event of an appeal, not more than thirty (30) days after the termination of such appeal by dismissal, withdrawal or judgment in favor of the applicant, the Commission shall designate the Chairman or Secretary to endorse the Plan and the date thereof upon the Plan in its behalf.

j) Filing of Plan. At such time as the Commission Chairman or Secretary endorse the Final Subdivision Plan in accordance with the requirements of the preceding paragraph, the Commission shall cause the applicant to be notified, by certified mail that such endorsement has occurred. Such notice shall constitute "delivery" for the purposes of the Connecticut General Statutes §8-25. Within ninety (90) days following the date of such notice, the applicant shall file the endorsed Final Plan with the Town Clerk and pay any necessary filing fees. The Commission may, upon request of the applicant, grant up to two (2) extensions of up to ninety (90) days each for such filing. Any Final Subdivision Plan not so filed shall become void. The Commission shall have no responsibility to retain any Final Subdivision Plans rendered void by operation of this provision.

The approved plans shall be also submitted with a CD formatted to be compatible with ArcView 8.0/GIS extensions DXF, DWG, DGN, APR, SHP or a format that is specified by the Land Use Administrator as technology changes. The plane rectangular coordinate system shall be Connecticut State Plane Coordinates with a horizontal datum NAD 83 if control points are within 1000 feet or NAD 27 if control points are further.

k) Alteration of Final Subdivision Plan Prior to Filing with Town Clerk. If the Final Subdivision Plan is altered, changed, erased or revised in any way between the time the Commission's approval is endorsed thereon and the time the Plan is filed with the Town Clerk, the approval shall be void unless the alteration has been approved by the Commission and so indicated on the Plan.

l) Alteration of Final Subdivision Plan After Filing with Town Clerk. If the Final Subdivision Plan is altered, changed, erased, or revised in any way after the time the Plan is filed with the Town Clerk, the approval shall be void unless the Amended Subdivision has been approved by the Commission and a new Final Plan endorsed and filed with the Town Clerk.

### **3.05 PLAN FOR RECORD SUBDIVISION - MAP CRITERIA**

a. The record subdivision map shall be prepared with an accuracy meeting the standards for a "Class A-2 Transit Survey". The map(s) shall be a clear and legible print at a scale of one inch equals forty feet (1"=40') feet on sheets twenty-four by thirty-six inches (24"x36"). When more than one (1) sheet is required an index sheet of the same size sheet showing the entire subdivision shall be submitted with the Plan. The Plan, which may composed of multiple sheets or sets of sheets, shall show the following information:

- i). Name and address of the owner of the land to be subdivided; name and address of the applicant if different from the owner;
- ii). The title of the subdivision, which shall not duplicate the title of any previous subdivision in the Town of East Haddam.
- iii). Date of Map
- iv). Graphic and word scale

- v). North arrow with reference to true, grid, magnetic north or relationship to other map shall be noted. (If magnetic north, the date of the magnetic reading shall be noted.)
- vi). Zones and Districts which subdivision lies in, total acreage, number of lots.
- vii). Name, license number, and embossed seal or official stamp of State of Connecticut Land Surveyor and/or Registered Civil Engineer Name, license number, signature box for Soil Scientist if any.
- viii). The plan shall contain the following statement: **"The Subdivision Regulations of the East Haddam Planning and Zoning Commission are a part of this plan, and approval of this plan is contingent on completion of all the requirements of said Subdivision Regulations."**

ix). A signature Box containing the following words:

**Approved by the East Haddam Planning and Zoning Commission**  
**Date:** \_\_\_\_\_ **Chairman/Secretary** \_\_\_\_\_  
**Expiration Date:** \_\_\_\_\_

**b. Subdivision Plan: at 1" = 40' scale on sheets 24" x 36"**

- i). Existing and proposed property and street lines - Proposed street names. Proposed road(s), names which shall not duplicate or be readily confused with already existing names unless an extension thereof.
- ii). Adjoining property lines for a distance of 200'; and the names of all adjacent subdivisions and/or property owners. Assessor's Map and Lot numbers included. Location and dimensions of all existing property lines of the subdivision with reference to monuments, pipes, drill holes, foundations or other points of reference of a fixed or semi-permanent nature.
- iii). Existing and proposed easements and right-of-way either on or off site, including those for utilities, sewers, and drainage.
- iv). Layout of lots and lot numbers, dimensions of all lot lines, acres and square footage of all lots, building set back lines, location of any monuments or markers to be placed at corners or angles of all lots. Dimensions on all lines shall be to the hundredth of a foot with bearings or deflection angles on all straight lines and the central angle, tangent distance, length of the arc, and radius of all arcs.
- v). A-2 certification and Licensed Surveyor Seal, with ties to a known "State" coordinate system. NAD 83 if within 1000 feet or NAD 27 if further.
- vi). A general location map showing the location of the subdivision area in relation to existing roads in the Town at a scale not less than 1" = 1000'.
- vii). All permanent features, such as existing structures, stone walls, utility poles and numbers, fences, watercourses, ponds, swampland, wooded areas, specimen trees of greater than 12" measured at DBH (especially along existing streets), exposed ledge, areas designated for conservation, proposed buffer areas, and land to be set aside for playground, park or open space use.
- viii). Topography is to be Class T-2 or T-3 standards and not interpolated from CGS quadrangle maps. Contours (existing and proposed) are to be at two feet intervals for lots to be subdivided and shall cover the entire lot unless a waiver is requested and granted. Elevation data shall be NAVD 88 if a benchmark is within 1000 feet of a subdivision.]
- ix). Layout of lots and lot numbers. The proposed lot number and assigned street number shall be the same when creating new streets. All lots shall have street numbers assigned in accordance with the following system: Heading north - odd numbers are assigned to the west, while the east side shall have the even numbers; heading south - odd numbers are assigned to the west, while the east side shall have the even numbers; heading east - odd numbers are assigned to the south, while the north side shall have the even numbers; heading west - odd numbers are assigned to the south, while the north side shall have the even numbers.
- x). Soil type or types to include FEMA 100 year Flood Zones, wetlands and streambelt areas as taken from field data and the detailed soil map of East Haddam by Middlesex County Soil and Water Conservation district;

- xi). Soil types and inland wetlands and watercourses, as defined in the Inland Wetlands and Watercourses Regulations, delineated by a certified soils scientists; Flood Zones, in accordance with the most current Federal Flood Insurance Rate Map; and regulated areas as defined by in the Inland Wetlands and Watercourses Regulations
- xii). Areas with 20% or more slope delineated.
- xiii). Proposed driveway grades over 8% labeled or noted.
- xiv). Proposed land uses, including location of buildings, buffer strips, fences, signs, etc.
- xv). Proposed limits of clearing and grading, stock pile sites.
- xvi). Storm water drainage and dry wells location if any.
- xvii). Proposed on site sanitary arrangements. This must include a report on soil conditions, based on drainage, deep test holes, and seepage testing made in accordance with the recommendations of the State Public Health Code as amended. The criteria for septic system design and reports is further explained in Section 4.04.
- xviii). Certification by Town Sanitarian per Section 4.04 of the Subdivision Regulations including test pit data and signature box as described in Section 4.04
- xix). Any additional data necessary, together with the aforesaid said data, to enable a licensed surveyor to determine readily the location of every street line, lot line, boundary line, and to reproduce such lines upon the ground to the A-2 Standard of Accuracy.
- xx). Certificate under seal of (I) a Connecticut licensed professional engineer as to the adequacy of proposed public Improvements, suitability of water supply, and waste disposal, and (ii) a Connecticut licensed land surveyor that both the survey and the map conform to the standards of survey and map accuracy respectively of Class A-2 as defined in the "Recommended Standards for Surveys and Maps in the State of Connecticut" as adopted by the Connecticut Association of Land Surveyors, Inc. on September 24, 1992, or as the same may be amended from time to time; or any successor agency authorized to define standards of accuracy in surveys.
- xxi). The location of any signs to be used for identification or sale of lots, in accordance with Section 12 Sign Regulations of the East Haddam Zoning Regulations.
- xxii). Where the subdivisions are proposed to be developed in phases, such phases shall be clearly delineated on the Final Subdivision Plan.
- xxiii). The Minimum Building Land Area as described in Section 4.06 shall be delineated on each lot. The plans shall include all soil investigate results.

### **c. Construction Plan and Profiles**

When new roads or improvements of existing roads are involved in a subdivision, the Final Subdivision Plan shall be accompanied by complete Plan-Profiles of each such road drawn on a sheet, which shall be twenty-four by thirty-six inches (24" x 36") in size. The horizontal scale shall be a horizontal scale of one inch equals forty feet (1" = 40') and the vertical scale shall be one inch equals four feet (1" = 4'). The plan shall conform to Section 5 of the Subdivision Regulations. Topography for the centerline shall be of T-2 standards. Such Plan-Profiles shall show:

- i) Layout of street with centerline horizontal geometry in stations coordinated with the profile.
- ii) Paved roadways, proposed signs, street trees, landscaped areas, guide rails, pavement striping, curbs, swales, sidewalks, bike paths, street lighting, partial driveways, easements, partial lot lines, lot numbers, utilities with all invert and top of frame elevations.
- iii) Lengths, slopes and types of pipe materials.
- iv) Typical cross section of roadway.
- v). Profile of roadway showing existing and finished grades, all tangent grades, and all vertical curve information.
- vi). All catch basins and man holes and connecting pipes.
- vii). By proper notation, location and elevations of bench marks, based on U.S.C.&G.S. datum NAD 83 and NAVD 88. Provide at least one bench mark per plan profile sheet.
- viii). Grades expressed as percentages.
- ix.) Data showing disposition of surface water, including, but not limited to, catch basins, plunge pools, swales, retention/detention basins, porous pavement, and the like; water and sanitary sewer pipes (if any), including sufficient data to permit checking of drainage designs; and the location of all associated easements or rights of way in favor of the Town or any public utility.
- x) Typical cross-section of each road indicating location, dimensions and materials of proposed paved improvements and utilities.
- xi) Location of street name, speed limit, stop, dead end, and other street signs..
- xii) Certificate under seal of a Connecticut licensed professional engineer as to the adequacy of proposed public Improvements and that the Plan-Profiles are substantially correct.
- xiii) Drainage system shall conform to Section 4.02.

## SECTION 4.0 GENERAL REQUIREMENTS

### **4.01 SOIL EROSION AND SEDIMENT CONTROL PLAN FOR LAND DEVELOPMENT**

A soil erosion and sediment control plan consistent with the publication of the Connecticut Council on Soil and Water Conservation in Cooperation with the Connecticut Department of Environmental Protection entitled, 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as the same may be amended from time to time, shall be submitted with all subdivision applications when the disturbed area of development is more than one-half (½) acre.

The Soil Erosion and Sediment Control Plan (E&S Plan) is an integral part of the Subdivision Plan. For the purposes of review, certification, bonding and enforcement, the E&S Plan narrative and drawings should be developed so they can be separated from the overall site plan, as needed to facilitate their use. On small, non complex subdivisions of four lots or less, the E&S plan need not be separate if clarity of information is maintained.

The E&S Plan shall relate only to the construction of proposed roads, driveways, storm drainage and other improvements. E&S controls for the future development of individual lots shall be shown on plans depicting potential locations for house, driveway, well and septic system.

a). In the event that any developer shall intend to make changes in the contour of any land proposed to be subdivided, developed, or changed in use by grading, excavating, or the removal or destruction of the natural topsoil, trees, or vegetative covering thereon, for the purposes of road construction and/or access ways construction, reducing slopes, drainage, waste disposal, removal and/or filling over soils and other similar purposes, the same shall only be accomplished after the owner of said land or his agent has submitted to the Commission, or its duly authorized representative, of a site plan and narrative for erosion and sedimentation controls.

The Commission, or its duly authorized representative, shall review these plans as submitted and shall take necessary steps to insure compliance by the developer with these plans as finally approved.

**b) E&S Plan Checklist** All Plans shall contain the information requested in the E&S checklist provided in the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control found in Chapter 3 and list underneath. *A copy of this worksheet is attached in Appendix B of these regulations and shall be part of the subdivision submittal.*

#### **1. Narrative**

- 1.1 Purpose and description of project.
  - 1.2 Estimates of the total area of the project site and the total area of the site that is expected to be disturbed by construction activities.
  - 1.3 Identification of site-specific erosion or sediment control concerns and issues.
  - 1.4 The phases of development if more than one phase is planned.
  - 1.5 The planned start and completion dates for each phase of the project.<sup>1</sup>
  - 1.6 Either provide or identify where in the E&S plan the following information is found:
    - 1.6.1 the design criteria, construction details and maintenance program for the erosion and sediment control measures to be used.
    - 1.6.2 the sequence of major operations within each phase, such as installation of erosion control measures, clearing, grubbing, excavation, grading, drainage and utility installation, temporary stabilization, removal of temporary erosion control measures
    - 1.6.3 the time (in days) required for the major operations identified in the sequence
  - 1.7 Identify other possible local, state and federal permits required.
  - 1.8 Identify the conservation practices to be used.
  - 1.9 A listing of all other documents to be considered part of the E&S plan (e.g. reports of hydraulic and hydrologic computations, boring logs, test pit logs, soil reports, etc.)
2. Support Documents (as may be needed to support Engineering Designs)
    - 2.1 Hydraulic calculations

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<sup>1</sup>These are often subject to change depending on markets, financing, permit approvals and weather conditions. A change in a start date can cause a restriction or prohibition in the use of proposed measures, and thereby require revisions to the E&S plan.

- 2.1.1 Size and locations of existing and planned channels or waterways with design calculations and construction details.
- 2.1.2 Existing peak flows with calculations
- 2.1.3 Planned peak flows with calculations
- 2.1.4 Changes in peak flows
- 2.1.5 Off-site effects of increased peak flows or volumes
- 2.1.6 Design calculations and construction details for engineered measures used to control off-site erosion caused by the project
- 2.1.7 Design calculations and construction details for engineered measures used to control erosion below culverts and storm sewer outlets
- 2.1.8 Design calculation and construction details for engineered measures used to control groundwater, i.e. seeps, high water table, etc.
  
- 2.2 Boring logs, test pit logs, soils reports, etc.
  
- 3.0 Site Drawing(s) Checklist
  
- 3.1 Jurisdictional Features Required on All Maps or Drawings
  - 3.1.1 North arrow
  - 3.1.2 Scale (including graphical scale)
  - 3.1.3 A title block containing the name of the project, the author of the map or drawing, the owner of record for the project, date of drawing creation and any revision dates
  - 3.1.4 Property lines
  - 3.1.5 Legend identifying the symbols used
  - 3.1.6 For plans containing E&S measures which require an engineered design, the signature and seal of a professional engineer licensed to practice in Connecticut
  
- 3.2 Site Locus Map
  - 3.2.1 Scale (1"= 1000' recommended)
  - 3.2.2 Project location (show property boundaries and at least the area that is within 1000 feet of the property boundaries)
    - 3.2.3 Roads, streets/buildings
    - 3.2.4 Major drainage ways (at least named watercourses)
  - 3.2.5 Identification of any public drinking water supply watershed area
  
- 3.3 Topography, Natural Features and Regulatory Boundaries
  - 3.3.1 Existing contours (2 foot intervals)
  - 3.3.2 Planned grades and elevations
  - 3.3.4 Limits of cuts and/or fills
  - 3.3.5 Soils, bedrock
  - 3.3.6 Seeps, springs
  - 3.3.7 Inland wetlands boundaries
  - 3.3.8 FEMA identified floodplains, floodways and State established stream channel encroachment lines
  - 3.3.9 Streams, lakes, ponds, drainage ways, dams
  - 3.3.10 Existing vegetation
  - 3.3.11 Tidal wetland boundaries and coastal resource limits (e.g. mean high water, shellfish beds, submerged aquatic vegetation)
  - 3.3.12 Public water supply watershed, well heads or aquifer boundaries (when available)
  
- 3.4 Drainage Patterns
  - 3.4.1 Existing and planned drainage patterns (including off-site areas)
  - 3.4.2 Size of drainage areas
  - 3.4.3 Size and location of culverts and storm sewers (existing and planned)
  - 3.4.4 Size and location of existing and planned channels or waterways
  - 3.4.5 Major land uses of surrounding areas
  
- 3.5 Road and Utility Systems
  - 3.5.1 Planned and existing roads and buildings with their location and elevations
  - 3.5.2 Access roads: temporary and permanent

- 3.5.3 Location of existing and planned septic systems
- 3.5.4 Location and size of existing and planned sanitary sewers
- 3.5.5 Location of other existing and planned utilities, telephone, electric, gas, drinking water wells, etc.
- 3.6 Clearing, Grading, Vegetation Stabilization
  - 3.6.1 Areas to be cleared, and sequence of clearing
  - 3.6.2 Disposal of cleared material (off-site and on-site)
  - 3.6.3 Areas to be excavated or graded, and sequence of grading or excavation
  - 3.6.4 Areas and acreage to be stabilized with vegetation (Temporary and/or permanent)
  - 3.6.5 Planned vegetation with details of plants, seed, mulch, fertilizer, planting dates, etc.

#### **4. Erosion & Sediment Control Drawings**

- 4.1 Location of E&S measure on site plan drawing with appropriate symbols
  - 4.2 Construction drawings and specifications for measures
  - 4.3 Maintenance requirements of measures during construction of project
  - 4.4 Person [name and 24-hour telephone number] responsible for maintenance during construction of project and statement that such information shall be update within 24 hours of any change and designation.
  - 4.5 Maintenance requirements of permanent measures after project completion
  - 4.6 Handling of emergency situations (e.g. severe flooding, rains or other environmental problems).
  - 4.7 If not provided in the narrative, the information listed in checklist paragraph 1.6 (see narrative heading)
- c.** The estimated costs of measures required to control soil erosion and sedimentation, as specified in the certified plan shall be submitted as part of the application. Measures to be taken to control erosion and sedimentation shall be described and provided for in the construction agreement and the estimated cost of accomplishing such measures shall be covered in a Bond or other assurances acceptable to the Commission.
- d.** Site development shall not begin unless the soil erosion and sediment control plan is certified and those control measures and facilities in the plan scheduled for installation prior to site development are installed. Planned soil erosion and sediment control measures and facilities shall be installed as scheduled according to the certified plan. All control measures and facilities shall be maintained in effective condition to ensure the compliance of the certified plan.
- e.** At the building permit application stage, a review will be conducted to insure conformance with the plan as approved for individual lots and site plans.
- f.** The Planning and Zoning Commission, or its duly authorized representative shall make the necessary review and evaluation of methods used and the overall effectiveness of the erosion and sedimentation control program.
- g.** To be eligible for certification, a soil erosion and sediment control plan shall contain proper provisions to adequately control accelerated erosion and sedimentation and reduce the danger from storm water runoff on the proposed site based on the best available technology. Such principles, methods and practices necessary for certification are found in the Connecticut Guidelines for Soil Erosion and Sediment Control 2002) as amended. The Commission may require additional information or measures where conditions so indicate the need. Alternative principles, methods and practices may be used with prior approval of the Commission.
- h.** The Commission or its duly authorized agent shall review and approve the soil erosion and sediment control plan, as filed, if it complies with the requirements and objectives of this regulation; or approve with limitations or modifications; or deny the plan when the development proposal does not comply with these regulations or may cause hazards or damage to the public safety and welfare.
- i.** Nothing in these regulations shall be construed as extending the time limits for the approval of any application under Chapters 124, 124A or 126 of the General Statutes.

j Prior to approval, any plan submitted to the Commission may be reviewed by the Connecticut River Coastal Conservation District which may make recommendations concerning such plan, provided such review shall be completed within thirty days of the receipt of such plan.

## **SECTION 4.02 - STORMWATER MANAGEMENT**

No subdivision of land or proposed land use shall alter natural watercourses, natural drainage and runoff areas or existing drainage and runoff areas unless suitable plans meeting the other requirements of these Regulations, certified by a professional engineer licensed in the State of Connecticut, are provided and approved by the Commission.

All cross culverts, detention basins, channels and ditches, driveway culverts and street drainage shall be designed in conformance with the *Connecticut Department of Transportation Drainage Manual* dated October 2000, as amended and the *Connecticut Stormwater Quality Manual* (CTDEEP) as amended. This requirement may be varied by the Commission according to conditions of the land and drainage requirements.

All necessary drainage easements shall be provided and shall extend a minimum of 10 feet around the drainage facility, except that easements for pipes shall be 20 feet wide and centered on the pipe.

### **4.02.1 Waivers for Providing Stormwater Management**

The minimum requirements for stormwater management may be waived in whole or in part upon written request of the Applicant, provided that the Applicant demonstrates to the satisfaction of the Commission that the immediately downstream watercourses will not be subject to:

- a. Deterioration of existing culverts, bridges, dams, and other structures.
- b. Deterioration of biological functions or habitat.
- c. Accelerated streambank or streambed erosion or siltation.
- d. Increased threat of flood damage to public health, life and property.

### **4.02.2 General Performance Criteria for Stormwater Management**

Unless judged to be exempt or granted a waiver by the Commission, the following performance criteria shall be addressed for stormwater management at all sites:

- a. All site designs shall establish stormwater management practices to control the peak flow rates of stormwater discharge associated with specified design storms and reduce the generation of stormwater. These practices should seek to utilize pervious areas for stormwater treatment and to infiltrate stormwater runoff from driveways, sidewalks, rooftops, parking lots, and landscaped areas to the maximum extent practical to provide treatment for both water quality and quantity. Infiltration of stormwater shall be accommodated to the extent possible though limitation of land disturbance and grade changes, retention of existing natural drainage area and wetlands, and use or creation of vegetated islands, vegetated medians, and vegetated perimeter buffer strips. *From Section 11- Parking.*
- b. All stormwater runoff generated from new impervious surfaces or changed habitats in the development shall not discharge stormwater directly into an inland wetland or watercourse without adequate treatment. Drainage shall be designed such that all surface runoff (both piped and overland flow) is conveyed through a vegetated swale, vegetated filter strip, created wetlands, rain gardens, detention basins with bio-filtration prior, or acceptable engineered solutions to discharge into existing wetlands, streams, ponds, or other waterbodies. *From Section 11- Parking*
- c. Structural Best Management Practices (BMPs) shall be designed to remove 80 percent of the average annual post development total suspended solids load. It is presumed that a BMP complies with this performance standard if it is:
- d. Sized to capture the prescribed water quality volume (WQV).
- e. Designed according to the specific performance criteria outlined in the *Connecticut Stormwater Quality Manual* (CTDEEP).
- f. Constructed properly.

### **4.02.3 Minimum Control Requirements**

- a. All stormwater management practices will be designed so that the specific storm frequency storage volumes (e.g., recharge, water quality, channel protection, 2, 10, 25, 100 year) as identified in the current *Connecticut Stormwater Quality Manual* (CTDEEP) are met, unless the Commission grants the applicant a waiver or the applicant is exempt from such requirements. Note especially the specific criteria related to channel protection and the use of multiple storm return frequencies, both cited in the *Connecticut Stormwater Quality Manual* (CTDEEP). The Connecticut Stormwater Quality Manual Worksheet is attached in Appendix C of these regulations and shall be part of the subdivision or site plan submittal.
- b. All stormwater management practices shall be designed to capture and treat stormwater runoff according to the specifications outlined in the *Connecticut Stormwater Quality Manual* (CTDEEP). These specifications will designate the water quantity and quality treatment criteria that apply to an approved stormwater management practice.
- c. In addition, if hydrologic or topographic conditions warrant greater control than that provided by the minimum control requirements, the Commission reserves the right to impose any and all additional requirements deemed necessary to control runoff volume, timing, rate and treatment.
- d. Applicants shall consult the *Connecticut Stormwater Quality Manual* (CTDEEP) for guidance on the factors that determine site design feasibility when selecting a stormwater management practice.
- e. The *Connecticut Stormwater Quality Manual* (CTDEEP) shall be consulted for detailed guidance on the requirements for conveyance for each of the approved stormwater practices.
- f. All stormwater management practices shall be designed to convey stormwater to allow for the maximum removal of pollutants and reduction in flow velocities. This shall include, but not be limited to:
  - i. Maximizing length of flow paths from inflow points to outflow points of basins, pools and ponds.
  - ii. Protection of inlet and outfall structures.
  - iii. Elimination of erosive flow velocities.
  - iv. Provision of underdrain systems, where applicable.
- g. All stormwater management practices must have a landscaping plan detailing the vegetation to be planted. The use of native grasses and small diameter wood-stemmed shrubs is encouraged as plantings for all vegetated swales, vegetated filter strips, created wetlands, rain gardens, or detention basins with bio-filtration. *From Section 11- Parking*
- h. The use of non-structural best management practices is encouraged in order to minimize the reliance on structural practices. Credit in the form of reductions in the amount of stormwater that must be managed can be earned through the use of non-structural practices that reduce the generation of stormwater from the site. These non-structural practices are explained in detail in the *Connecticut Stormwater Quality Manual* (CTDEEP) and applicants wishing to obtain credit for use of non-structural practices must ensure that these practices are documented and can reasonably be expected to remain maintenance-free and remain unaltered by subsequent property owners.

#### **4.02.4 Stormwater Management Plan Requirements**

The stormwater management plan shall include:

- a. Calculations: Hydrologic and hydraulic design calculations for the pre-development and post-development conditions for the design storms specified in the *Connecticut Stormwater Quality Manual* (CTDEEP) (i.e., 2, 10, 25 & 100-yr storm). Such calculations shall include, at a minimum:
  - i. Description of the design storm frequency, intensity and duration,
  - ii. Time of concentration and travel time.
  - iii. Soil Curve Numbers or runoff coefficients.
  - iv. Peak runoff rates and total runoff volumes for each watershed area.
  - v. Infiltration rates, where applicable, as determined by field testing of hydraulic conductivity.
  - vi. Culvert capacities.
  - vii. Flow velocities.

- viii. Data on the increase in rate and volume of runoff for the design storms referenced in the *Connecticut Stormwater Quality Manual* (CTDEEP).
- ix. Water surface elevations showing methodologies used and supporting calculations.
- xx. Stage-discharge curves, outlet rating curves and inflow and outflow hydrographs for storage facilities (e.g., stormwater ponds and wetlands).
- xxi). Hydrologic and hydraulic analysis for all structural components of stormwater system (e.g., storm drains, open channels, swales, management practices, etc.) for applicable design storms including final analysis of potential downstream effects of project, where necessary.
- xxii). Documentation of sources for all computation methods and field test results.

b. Soils Information: If a stormwater management control measure depends on the hydrologic properties of soils (e.g., infiltration basins), then a soils report must be submitted. The soils report must be based upon on-site boring logs or soil pit profiles. The number and location of required soil borings or soil sites must be determined based on what is needed to determine the suitability and distribution of soil types present at the location of the control measure. If infiltration is to be part of the stormwater management plan, then field testing of hydraulic conductivity may be required if determined necessary by the Commission's engineer to evaluate the proposal.

c. Maintenance and Repair Plan: The design and planning of all stormwater management facilities shall include detailed maintenance and repair procedures to ensure their continued function. These plans will identify the parts or components of a stormwater management facility that need to be maintained and the equipment and skills or training necessary. All stormwater BMPs shall be designed in a manner to minimize the need for maintenance and reduce the chances of failure. Design and maintenance guidelines to be followed shall be in accordance with the most recent version of the *Connecticut Stormwater Quality Manual* (CTDEEP). *From Section 11-Parking*

The applicant shall demonstrate the failure pattern for any proposed BMP and shall ensure that such failure does not adversely impact adjacent structures *or wetland systems*. Surficial detention structures which include a construction embankment greater than one (1) foot in height shall be design to include emergency spillways and appropriate downstream erosion protection.

d. Landscaping plan: The applicant must present a detailed plan for planting of vegetation at the site after construction is finished.

e. Maps and plans: The applicant must depict the stormwater management on the supplemental plans (scale of 1" = 40' or greater detail). Such plans must illustrate, in addition to the mapping requirements cited in Section 3, at a minimum:

- i. Perennial and intermittent streams.
- ii. Location and boundaries of resource protection areas such as wetlands, lakes, ponds, and other setbacks (e.g., stream buffers, drinking water well setbacks, septic setbacks)
- iii. Location of existing and proposed conveyance systems such as grass channels, swales, and storm drains.
- iv. Flow paths.
- v. Location of floodplain and floodway limits.
- vi. Location and dimensions of proposed channel modifications, such as bridge or culvert crossings.
- vii. Location, size, maintenance access, and limits of disturbance of proposed structural stormwater management practices.
- viii. Representative cross-section and profile drawings and details of structural stormwater management practices and conveyances (i.e., storm drains, open channels, swales, etc.) which include existing and proposed structural elevations (e.g., invert of pipes, manholes, etc.) and design water surface elevations.
- ix. Structural details of outlet structures, embankments, spillways, stilling basins, grade control structures, conveyance channels, etc.
- x. Downstream structures within two-hundred (200) feet of proposed BMP. The Commission shall have the right to increase the separation distance from the downstream structure if the proposed BMP structure, in the opinion of the Town's engineer, poses a significant risk.

#### **4.02.5 Assumptions Made**

All Stormwater Management plans shall disclose all assumptions made in regard to future land clearing and regrading, creation of impervious surfaces, and other development activities that influence the rate, quality and volume of runoff. These include, but are not necessarily limited to, clearing limits, size and locations of driveways, houses, tennis courts, barns, pools, etc. The Commission may require the establishment of restrictions on one or more lots in situations where limits to such characteristics of lot development cannot be accurately predicted and enforced in advance; provided, however, that the Commission has no obligation to accept land use restrictions as mitigation to potential drainage issues. Restrictions should be used only in unique situations and in areas where such restrictions are clearly enforceable.

#### **4.02.6 Maintenance plan:**

The applicant must submit a maintenance plan for all Stormwater BMPs. The plan must include:

- a. Description of maintenance tasks with recommended implementation schedule.
- b. Description of access and safety issues.
- c. For those small individual stormwater management facilities that are to be maintained by future property owners, the mylars, as-builts, and deeds must include this notice that a declaration of responsibilities and obligations will be filed on the land records as part of the subdivision approval. See Appendix D for the declaration language.

\* This note is to be part of the mylar for the subdivision plans, Site Plans, and Special Exception plans, as-builts for each structure prior to Certificate of Zoning Compliance, and on each deed associated with the transfer of the property.

\*The stormwater management structure maintenance is the responsibility of the property owner. A Stormwater Treatment Facility Maintenance Declaration has to be filed on the East Haddam Land Records as part of the approval. The individual lots of this subdivision have engineered stormwater facilities that are to be installed prior to the issuance of a Certificate of Zoning Compliance. The stormwater facilities are designed to manage quantity and quality of stormwater before the water leaves the property. It is the responsibility of the property owner to maintain these facilities to insure they function properly. At a minimum they are to be maintained every five years and at the time of resale. Maintenance guidelines as to how to maintain the stormwater facility are included as part of the subdivision or site plan, can be found in the *Connecticut Stormwater Quality Manual (CTDEEP)* as amended, or the Land Use Office can be asked for guidance.

### **4.03 LAND WITH LIMITATIONS FOR DEVELOPMENT**

1). No land shall be subdivided for building purposes which consists of soil types designated as very poorly drained, poorly drained, alluvial or flood plains or of soil types which have very significant limitations, significant limitations of steep slopes for on-site soil absorption sewerage disposal facilities, said soils designated by the U.S. Department of Agriculture and the National Resources Conservation Service, as may be amended from time to time and listed in (a) and (b) below.

- a. Soil not suitable for the installation of septic tank absorption fields.

The soils that are categorized as being not suitable for the installation of septic tank absorption fields have been so, primarily because they are either inland wetlands or have a shallow depth to bedrock. Other limiting factors include year round and seasonal high water tables, frequent flooding and ponding, very slow permeability to substratum, steep slopes, rock outcrops, and in some cases the possible pollution of ground water.

Aa	Adrian muck
BcA	Berlin silt loam, 0 to 5 percent slopes
Ce	Carlisle muck
HSE	Hollis-Rock outcrop complex, 15 to 40 percent slopes
HyC	Holyoke-Rock outcrop complex, 3 to 15 percent slopes
HZE	Holyoke-Rock outcrop complex, 15 to 40 percent slopes
LG	Leicester, Ridgebury and Whitman extremely stone fine sandy loam
Ps	Poduck fine sandy loam
Rb	Raypol silt loam
Ru	Rumney fine sandy loam
Rv	Rumney Variant silt loam
Sb	Saco silt loam
Sc	Scarboro mucky loamy fine sand
St	Suncook loamy sand
Wd	Walpole sandy loam

We	Westbrook mucky peat
Wh	Westbrook mucky peat, low salt
Wr	Wilbraham silt loam
Wt	Wilbraham extremely stony silt loam

b. Soils with significant limitations for the installation of septic tank absorption fields.

The soils that are categorized as having significant limitations for the installation of septic tank absorption fields are limited by steep slopes (15-45%), seasonal high water table, stoniness, shallow depth to bedrock and slow to very slow permeability to substratum. Within each major soil grouping, there may be found, upon field investigation "pockets" of soils with slight to moderate limitations. Due to the varied range of slope in each unit (15-45%), there may be areas where the slope is acceptable. With careful testing, design and installation, a septic system can be successfully constructed subject to the provisions of the State Health Code.

CdD	Canton and Charlton extremely stony fine sandy loam, 15 to 35 percent slopes
EfA	Ellington fine sandy loam, 0 to 5 percent slopes
HrC	Hinckley gravely sandy loam, 3 to 5 percent slopes
HME	Hickley and Manchester soils, 15 to 45 percent slopes
HuD	Holyoke-Cheshire very stony silt loams, 15 to 35 percent slopes
LpA	Ludlow silt loam, 0 to 3 percent slopes
LpB	Ludlow silt loam, 3 to 8 percent slopes
LuB	Ludlow very stony silt loam, 3 to 8 percent slopes
LuC	Ludlow extremely stony silt loam, 3 to 15 percent slopes
NnA	Ninigret fine sandy loam, 0 to 5 percent slopes
PeD	Paxton and Montauk extremely stony fine sandy loams, 15 to 35 percent slopes
SgA	Sudbury sandy loam, 0 to 5 percent slopes
WkD	Wethersfield loam, 15 to 35 percent slopes
WXA	Woodbridge fine sandy loam, 0 to 3 percent slopes
WXB	Woodbridge fine sandy loam, 3 to 8 percent slopes
WyA	Woodbridge very stony fine sandy loam, 0 to 3 percent slopes
WyB	Woodbridge very stony fine sandy loam, 3 to 8 percent slopes
WzA	Woodbridge extremely stony fine sandy loam, 0 to 3 percent slopes
WzC	Woodbridge extremely stony fine sandy loam, 3 to 15 percent slopes
YaB	Yalesville fine sandy loam, 3 to 8 percent slopes
YaC	Yalesville fine sandy loam, 3 to 8 percent slopes

c. Soils that are generally suitable for the installation of septic tank absorption fields.

The soils that are categorized as being generally suitable for the installation of septic tank absorption fields are mostly well drained, have moderate to rapid permeability, and a slight slope. In some cases there is slow permeability in the substratum and a shallow depth to bedrock. For the most part, with careful testing, design and installation, a septic system can be installed with few complications.

d. Engineered design systems accepted by the Commission may require a bond in an amount determined by the Commission and for a period of time specified by the Commission to provide that the Town is placed in an assured position that the proposed designs work satisfactorily. After the approval of the Planning and Zoning Commission and the concurrence of the First Selectman, such bond shall be released by the Commission.

**4.04 CERTIFICATION BY TOWN SANITARIAN**

The Chatham Health District Official or any official or agency so appointed by the Board of Selectmen is the Town Sanitarian.

Each proposed subdivision lot shall be approved by the Town Sanitarian as having sufficient details and data to demonstrate that said lot can support a septic system, prior to its approval by the Commission.

All percolation tests and test pits shall be witnessed by the Town Sanitarian and shall be specified on all subdivision plans. Each proposed lot shall at the minimum have two test pits located in each of the proposed primary and reserve leaching areas.

Test pits and percolation tests shall be performed in accordance with Section 19-13-B103e(d) Site Investigation, of the Connecticut Public Health Code (as amended), and inspected by the Town Sanitarian. The location of test pits and percolation tests shall be in accordance with Section 19-13-B103e(e) (as amended).

All test pit data shall be shown on all subdivision/resubdivision maps and filed and recorded. The data shall be certified by the Town Sanitarian.

Groundwater and ledge observation test pits shall be filled in immediately after witnessing by the Town Sanitarian and / or the applicant's engineer. Test pits which remain open more that 72 hours after witnessing are in violation of the zoning regulations. Applications received in which test pits remain open shall be subject to denial on that basis.

"As-Built" plans are required for the above sections and for any grading done in conjunction with reducing slopes for onsite sewerage disposal systems.

Engineered onsite sewage disposal plans, by proposed lot, as may be required by the Town Sanitarian and/or the Commission.

A signature box shall contain the following words:

CERTIFICATION BY THE TOWN SANITARIAN.

I HERE-BY CERTIFY THAT ALL LOTS ON THIS MAP MAY HAVE SEPTIC SYSTEMS

AND WELLS AT LOCATIONS SHOWN. THE FOLLOWING LOTS, IF ANY, SHALL HAVE

ENGINEERED DESIGNED SYSTEMS\_\_\_\_\_.

TOWN SANITARIAN \_\_\_\_\_ DATE \_\_\_\_\_.

**4.05 RESERVE PARCELS**

- 1) No privately owned parcel or portion of property shall be reserved in such a way that it can control or impede access to any part of the subdivision from any street or other public area, or from any abutting property to any proposed street, unless expressly approved by the Commission.
- 2) Any existing rights-of-way, easements or other rights on land to be subdivided shall be recorded on the Subdivision Map.
- 3) No parcel of land may be subdivided into lots or parcels that can not be demonstrated to support the intended use for residential, commercial, or industrial uses unless the property is subdivided for municipal, agricultural, or conservation purposes as allow in the C.G.S. under Section 8-18.

**4.06.1 MINIMUM BUILDABLE LAND REQUIREMENTS**

Scope of Requirement

No proposed plan of a new Subdivision in any district except the R1/2, C/B/IG, EHVD and C3 districts shall hereafter be approved unless the proposed lots equal or exceed the minimum size, width, and criteria requirements set forth in the various districts of these Regulations except as may otherwise be specifically provided in a Conservation Subdivision. Each proposed lot shall include an area of minimum buildable land which complies with all of the criteria as defined in the section below. Lots constructed in the past that have not met these requirements have demonstrated undesirable effects such as unnecessary and excessive blasting, flooded basements, ground water management problems, stormwater management issues, questionable long term septic viability, ground water contamination, and erosion control problems. Additional testing in the field may be required as directed by the Town of East Haddam representative to verify compliance with the Minimum Buildable Land Area.

Minimum Criteria of Buildable Land

Each lot shall meet the following criteria:

- a. In the R2 and R4 Districts an area of at least 3/4 acre (32,670 square feet) shall be delineated, having at least four sides with the shortest side being no less than 130 linear feet. The shape of such an area shall generally resemble a rectangle,

pentagon or other like geometric figure. In the R and R1 District an area of at least 1/2 acre (21,780) shall be delineated, having at least four sides with the shortest side being no less than 90 linear feet. The shape of such an area shall generally resemble a rectangle, pentagon or other like geometric figure. (Hereinafter the “MBL Area”)

b. Within the MBL Area, naturally occurring topography not exceeding twenty-five percent (25%) slope in grade, as measured in 40 foot increments throughout the MBL Area. Topography exceeding 25% slope shall only be permitted to comprise 20% of the MBL Area. Areas exceeding twenty-five percent (25%) slope shall be shaded on the proposed plans.

c. Lots where testing indicates that there is less than twenty four inches (24”) of naturally occurring soil to ground water shall not to be included in the MBL Area.

d. Ledge rock no higher than four (4) feet below the natural ground surface as observed during soil testing shall not be included in the MBL Area.

e. No Inland or Tidal Wetlands or Watercourses, determined by a professional soils scientist, who is certified by the Society of Soils Scientists of Southern New England or the one hundred foot Upland Review Areas for wetlands and watercourses as defined by the East Haddam Inland Wetlands and Watercourses Commission, shall be contained in the MBL Area.

f. No MBL Area shall contain areas of vehicular travel easements, right of ways, underground utilities, drainage easement areas, nor shall restrictive cutting easements or conservation easements be used in lieu of Stormwater Management. Easement areas of overhead electrical wires can be used for the MBL Area as long as the plan does not violate any easement prohibitions (ie buildings/structures).

**4.06.2 ALTERNATIVE SOIL BASED SUBDIVISION REVIEW – Alternative Minimum Buildable Land Regulation Intent – for existing lots which cannot meet the minimum lots criteria in Section 10.4 of the Zoning Regulations and Section 4.06 of the Subdivision Regulations but with additional land area may be able to meet the Stormwater Management Criteria in Section 4.02 of the Subdivision Regulations and the Public Health Code.**

For an existing parcel which is unable to meet the subdivision regulations under the current minimum buildable land area regulations (Section 10.4 and 4.06, an alternative soil based investigation may be explored and implemented if the following conditions are met. As with all subdivisions, it is recommended that all subdivisions be reviewed on a preliminary layout. See Section 3.01 through Section 3.03 of the East Haddam Subdivision Regulations.

a. In the R2 and R4 Districts an area of at least ¾ acre (32,670 square feet) shall be delineated, having at least four sides with the shortest side being no less than 130 linear feet. In the R and R1 District an area of at least ½ acre (21,780 square feet) shall be delineated, having at least four sides with the shortest side being no less than 90 linear feet. The shape of such an area shall generally resemble a rectangle, pentagon or other like geometric figure (Hereinafter the “MBL Area”). This MBL Area is to be within the Proposed Lot Development Area.

b. One acre of additional land will be required in each district, but the proposed lot and the additional acreage should be comprised of soils designated as Class A, B, and C soils. If the addition of one acre of soil does not meet the requirement of these regulations, additional acreage in one (1) acre increments shall be added to meet the requirements of these regulations.

c. All newly proposed lots will have to meet the Connecticut Public Health Code.

d. All newly proposed lots will have to meet the Stormwater Management Criteria in Section 4.02 of the Subdivision Regulations. Stormwater management shall be contained on each subject lot and will not be subject to restrictive cutting easements or conservation easement to obtain the stormwater management goals.

e. Within the proposed lot development area, naturally occurring topography exceeding twenty five percent (25%) slope in grade, as measured in 40 foot increments throughout the Lot Area shall be shaded on the proposed plans. Topography exceeding twenty five percent (25%) slope shall only be permitted to comprise twenty five percent (25%) of the proposed Lot Development Area.

f. Within the proposed lot development area no more than twenty five percent (25%) of the Lot Area can contain soils classified as Class D and E soils combined. Areas consisting of Class D and E soils shall be identified on each lot and the percentage of the area of Class D and E soils shall be noted on the proposed subdivision map. See Appendix E for soil classifications.

g. No proposed Lot Area shall contain existing areas of vehicular travel easements, right of ways, underground utilities, drainage easement areas, nor shall restrictive cutting easements or conservation easements be used in lieu of stormwater management. Easement areas of overhead electrical wires can be used for MBL Area as long as the plan does not violate any easement prohibitions (ie: buildings/structures).

h. All proposed lots shall meet the other requirements of the Subdivision and Zoning Regulations. Applicant has to choose one method of subdivision review process for the proposed lot under Section 4.06.1 or Section 4.06.2. Under the filing of an alternative subdivision review under Section 4.06.2 the applicant cannot apply as part of a Conventional or Conservation Subdivision. Existing parcels, as of the effective date of this regulation, shall not be brought in for review in phases to circumvent the intent of these regulations.

#### **4.07 INLAND WETLANDS AND WATERCOURSES COMMISSION**

No application for Subdivision shall be deemed complete without the submission of a certified copy of the motion for approval or report as issued by the East Haddam Inland Wetlands and Watercourses Commission. Any plans submitted to the Planning and Zoning Commission shall conform, in all relevant respects, to those plans submitted to the Inland Wetlands and Watercourses Commission as the same were approved, or modified and approved, by said Commission.

#### **4.08 PASSIVE SOLAR ENERGY TECHNIQUES**

The applicant shall demonstrate to the Commission that they have considered, in developing the plan, using passive solar energy techniques. Passive solar energy techniques mean site design techniques which maximize solar heat gain, minimize heat loss and provide thermal storage within a building during the heating season and minimize heat gain and provide for natural ventilation during the cooling season. The site design techniques shall include, but not limited to: (1) house orientations; (2) street and lot layout; (3) vegetation; (4) natural and man-made topographical features; and (5) protection of solar access within the development.

#### **4.09 OPEN SPACES AND RECREATIONAL AREAS**

##### 4.09.01) DISPOSITION

For any subdivision of land under these Regulations, the Commission may require of the subdivider the disposition and official dedication of appropriately located and sized open space or recreation areas. For the purpose of this Section, "open space or recreation areas" shall be defined to include, but not be limited to: areas left in their natural, undisturbed state; agricultural land for which development rights have been assigned or otherwise alienated in perpetuity; areas and facilities for non-commercial, non-profit recreation; and similar areas for wildlife habitat, passive and active recreation, groundwater recharge, scenic preservation, and the like. In determining the appropriateness of an open space and/or recreation area disposition, the Commission shall consider Plan of Conservation and Development objectives and map designations and the subject site's characteristics with respect to the following objectives: The conservation and protection of wildlife and natural or scenic resources including lakes, ponds, rivers, streams, streambelts, inland wetlands, aquifers, significant woodlands, ridges, ravines, ledge outcroppings and other unusual physical features; the protection of historic or archeological sites; the expansion of existing open space and recreational areas and the meeting of neighborhood and/or community-wide recreational needs. In determining the location of open space, the Commission may consider potential for combination with existing or proposed open space on adjoining properties owned by any public or private institution.

##### 4.09.02) SIZE

Where open space and/or recreation area disposition is deemed appropriate, the size of the required areas shall be determined by the Commission based on the site's value and importance in meeting the objectives cited in Section 4.09.01 and the scope of the subdivision proposal. Required open space and/or recreation areas shall be not less than 15% percent of the property under consideration. In determining the total land to be reserved as open space or recreation land, the Commission may consider not only the tract or tracts of land to be immediately subdivided, but also any other adjacent tract or tracts owned, controlled or under agreement to buy or optioned by the subdivider. Areas to be reserved as open space and/or recreation land shall be shown on the subdivision map. This Section shall only apply to subdivisions of more than 5 lots or 15 acre parcels created since the adoption of these Regulations. For purposes of calculating the percentage of open space required, any lot upon which a dwelling existed prior to the filing of the subdivision or resubdivision application shall be excluded; provided, however, that the open space required may be located within such lot. Any open space required under this Section shall be credited toward the requirements for any subsequent resubdivision of any component lot of the subdivision.

#### **4.09.03: SITES OF ARCHAEOLOGICAL OR HISTORICAL SIGNIFICANCE**

Any significant sites shall, where possible, be left undisturbed and may be considered in meeting the minimum open space requirements of this Section.

#### **4.09.04: METHOD OF DISPOSITION**

The Commission shall determine the most appropriate method of disposition after considering, among other things, the relationship of the subject area(s) and its specific characteristics to the Plan of Development and the objectives cited in Section 9.01; the desirability and suitability of public access and use and the scope of the subdivision proposal. The following disposition options may be utilized by the Commission:

- a. Perpetual dedication in fee simple to the Town.
- b. Perpetual dedication in fee simple to the State of Connecticut.
- c. Perpetual dedication in fee simple to a land trust (at the option of the subdivider).
- d. Dedication in fee simple to a homeowners' association (see, Section 4.09.08).
- e. Utilization of conservation easement(s), with or without public access.
- f. Utilization of a recreation easement.
- g. Private ownership with the appropriate taking of development rights.
- h. Any combination of the above or any suitable alternative approved by the Commission. Any conservation easements or other open space covenants or restrictions shall be subject to the approval of the Commission in form and content.

#### **4.09.05: REFERRALS**

The Commission may refer for review and comment any subdivision plan and proposal for the provision of open spaces and/or recreation land to the Conservation Commission, Open Space Committee, Recreation Commission, Connecticut River Coastal Conservation District, or any other appropriate agency.

#### **4.09.06: CONDITION OF OPEN SPACES AND/OR RECREATION LAND**

Open space and/or recreation areas shall typically abut or have direct public access to a public street and, as appropriate, any existing park or public land. All such areas shall include access roadways to be graded and improved in a manner suitable for safe pedestrian and vehicular traffic. Access roadways shall have an adequate base, shall be adequately drained and shall typically be twenty (20') feet wide and have a slope no greater than twelve (12%) percent.

Land to be provided as open space for the purpose of conservation and protection of wildlife and natural or scenic resources shall typically be left in its natural state by the Subdivider. Except for improvement as may be required by the Commission, open space areas shall not be graded, cleared, or used as a repository for brush, stumps, earth, building materials or debris. The Commission may require that any land to be dedicated for recreational use be cleared of brush, trees and debris; be graded to properly dispose of surface water; be covered with organic topsoil to a depth of four (4") inches; be seeded with low maintenance grass seed and be otherwise improved so that the land is left in a condition appropriate to the intended use. The Commission need not accept land composed entirely or substantially of inland wetlands in satisfaction of the requirements of this Section, unless it considers such areas to have special habitat or other environmental value.

When site improvements are required, they shall be clearly shown on the final subdivision maps or alternatively on a separate site improvements plan and they shall be approved by the Commission prior to the filing of the subdivision plan.

#### **4.09.07: ENFORCEMENT BONDING**

To ensure proper construction of any required Improvements, the Commission shall require the subdivider to post a performance bond in an amount and with terms acceptable to the Commission. Unless modified by the Commission in accordance with Section 3.04g of these Regulations, all required Improvements of open space and/or recreation land shall be completed prior to the occupancy of fifty (50%) percent of the dwellings within the subdivision.

#### **4.09.08: HOMEOWNERS' ASSOCIATION**

The Commission may, upon the request of the subdivider, permit the ownership and maintenance of the open space and/or recreation area to be transferred to an association of property owners. Such transfer shall be in accordance with standards established by the Commission to include, but not be limited to, the following which:

- a) Establishes a mandatory participation in an association of property owners to maintain the land reservation for open space park and playground purposes, with power to assess all members for all necessary costs.
- b) Will be binding on all future property owners.
- c) Will be perpetual.
- d) Will not be affected by any change in zoning or land use.
- e) Will assure adequate maintenance.
- f) May be enforced by the Town by appropriate legal action.
- g) Shall provide that if maintenance or preservation of the dedication no longer comply with the provisions of the document, the Town may take all necessary action to assure compliance and assess against the association all costs incurred by the Town for such purposes.

After approval by the Town Attorney and Commission, said document shall be filed by the subdivider in the Office of the Town Clerk.

#### **4.09.09: LEGAL TRANSFERAL**

Properly executed legal documents, including warranty deeds for any title transferals, shall be prepared in accordance with the provision of this section and shall be submitted in triplicate with the final subdivision map to be filed. All documents must be acceptable to the Town Attorney and Planning Staff and shall refer to the subdivision maps by title. All warranty deeds for dedication of land to the Town shall be held in escrow by the Commission to be recorded on the Town Land Records upon acceptance by the Board of Selectman. In the event that acceptance is rejected by the Board of Selectman, the deed shall be returned and the subdivider shall return to the Commission for determination of an alternative means of preserving the open space and/or recreation areas. In no case, shall the acceptance of any deed by the Commission or an employee of the Town be deemed as acceptance of the open space and/or recreation area by the Town.

#### **4.09.10: DEDICATION FOR OTHER MUNICIPAL PURPOSES**

In the event the subdivider desires to transfer to the Town land for other municipal purposes such as future schools, fire houses, etc., the dedication provisions of this Regulation shall be complied with. The Commission may consider such a municipal dedication as a credit toward any open space and/or recreational area disposition requirements.

#### **4.09.11: PAYMENT OF FEE IN LIEU OF OPEN SPACE**

In accordance with Connecticut General Statutes §8-25, as amended by Public Act 90-239, Section 1, the Commission may authorize a subdivider to pay a fee to the Town in lieu of the disposition of land by one of the methods set forth in Section 4.09.04 hereinabove. Such authorization may be granted by the Commission if and when it determines, in its sole discretion, that there are inadequate areas on the subdivision which merit preservation by one of the methods set forth in Section 4.09.04, or that there are other areas in the Town of East Haddam where preservation would be more beneficial to the public health, safety and welfare. In the event that such authorization is granted by the Commission, such payment or combination of payment and the fair market value of land transferred shall be equal to not more than ten (10%) percent of the fair market value of the land to be subdivided prior to the approval of the subdivision. The fair market value shall be determined by an appraiser jointly selected by the Commission and the subdivider. A fraction of such payment, the numerator of which is one and the denominator of which is the number of approved lots in the subdivision, shall be made at the time of the sale of each approved lot in the subdivision and placed in a fund. Such fund shall be used solely for the purpose of preserving open space or acquiring additional land for open space or for recreational or agricultural purposes. The said payment obligation shall be secured by a lien against each lot in the subdivision which shall be filed at the time that the final subdivision plans are filed in the Office of the Town Clerk, in accordance with Section 3.05 of these Regulations. The said lien shall be in a form approved by the Commission, and shall be unencumbered by any mortgage or encumbrance having priority over said lien, as evidenced by a Certificate of Title, in accordance with Section 3.05 of these Regulations.

#### **4.09.12: EXEMPTIONS FROM FEE IN LIEU OF OPEN SPACE DISPOSITION REQUIREMENTS**

In accordance with Public Act 90-239, Section 1, the provisions of Section 9.b and 9.k shall not apply if:

a) The transfer of all land in a subdivision of less than five (5) lots is to a parent, child, brother, sister, grandparent, grandchild, aunt, uncle, or first cousin of the property owner for no consideration. Such intended transfer shall be evidenced by covenants, restrictions, contracts, or other legally binding documents as the Commission may approve, which documents shall be filed in the Land Records in accordance with the procedure and other requirements of Section 3.05 of these Regulations. If the Commission determines, based on events subsequent to the approval of such subdivision, that such transfers were intended to be temporary, and for the sole purpose of evading the requirements of this Section 4.09, the Commission may void the subdivision in accordance with Section 1.07 of these Regulations.

b) The subdivision is to contain affordable housing, as defined in Section 8-39a of the Connecticut General Statutes, equal to twenty (20%) percent or more of the total housing to be constructed in such subdivision. Such restrictions for affordable housing shall be evidenced by such documents as the Commission may require, and such restrictions shall run with the lots affected thereby in perpetuity. If, subsequent to approval of the Subdivision, the lots designated for affordable housing shall not be sold for that purpose, the Commission may void those subdivision lots in accordance with Section 1.07 of these Regulations.

#### **4.10: STREAMBELT RESERVATIONS**

The applicant shall delineate a streambelt along any watercourses passing through the property to be subdivided. The streambelt shall be established in accordance with the publication of the "Streambelt Map", dated April 1973, and on file at the Town Clerk's Office and the Zoning Office.

#### **4.11: GROUNDWATER MANAGEMENT PLAN**

If the seasonal groundwater elevations could affect the structures, sewage disposal systems or the roadway, a system of underdrains shall be shown on the plans. This includes curtain drains, footing drains, swales, and other features for groundwater management.

#### **4.12: FIELD REVIEW BY COMMISSION**

The Commission may request that all proposed roadway centerline, lot lines, house sites, septic areas, wetland borders and locations of all major drainage facilities be staked in the field by the developer's engineer or surveyor to permit the Commission to view the proposed locations. The centerline shall be staked every one hundred (100) feet and the stakes shall show the roadway station.

#### **4.13: REQUIREMENT OF AFFORDABLE HOUSING**

Reserve

#### **4.14: TREES, SOIL REMOVAL AND ROADS**

**4.14.01:** For the purpose of enhancement of property values and for erosion control, the preservation and protection of shade trees throughout the Subdivision shall be encouraged, except where they interfere with roads and utilities.

**4.14.02:** Approval of a subdivision by the Commission shall not constitute approval of the removal of soil, topsoil or other excavated material from the premises other than that from the road area, and then only to the depths shown on the approved plan.

**4.14.03:** The land located within a subdivision shall be properly graded and left in a condition which will be free of rubble and debris, and property stabilized to eliminate erosion. Stumps, logs, construction materials, and other debris shall only be buried on site in locations designated on the approved subdivision plans, and in compliance with all applicable Town and State laws and regulations.

**4.14.04:** The Commission shall require that Street trees be planted on both sides of any Street to be dedicated to the Town. The Commission may also required buffers planted as described in Section 4.18. Said planting plans shall be prepared by a landscape architect or other credentialed professional acceptable to the Commission and shall be accompanied with a planting timeline. Trees shall be spaced approximately fifty (50') feet apart subject to the variations made necessary by driveways,

street corners and walks, and shall be located approximately ten (10') feet from the street line. Trees to be planted shall be 2 1/2" to 3 1/2" in caliper or larger, and shall have a minimum height of eight (8') feet. The kind of tree shall be subject to the approval of the Commission who shall not approve low branching trees, trees which are disease bearing or cause damage to sewers or drains, or trees which create a traffic hazard. Acceptable species are Sugar Maples (*Acer saccharum*), Red Maple (*Acer rubrum*), London Planetree (*Plantanus acerfolia*), Pin Oak (*Quercus palustris*), Red Oak (*Quercus rubra*), Green Ash (*Fraxinus pennsylvanica*), and Blackgum (*Nyssa sylvatica*). Alternative native tree species and groupings of native shrub species may be substituted with the Commission's approval. Where the tree may interfere with utility poles and wires (under or above ground), the Commission may permit the location of required trees within the front ten (10') feet of the proposed lots. Existing trees along the proposed street which conform to these requirements may be substituted for new trees. Specimen or historic trees located within the right-of-way of any existing Town street shall not be removed without the prior approval of the Commission.

#### **4.15 PEDESTRIAN WALKWAYS / BIKEWAYS**

In areas where the proposed street system does not conform to the anticipated pattern of pedestrian circulation, particularly in the area of existing or proposed parks, playgrounds, or open spaces, the Commission may require the dedication and construction of separate pedestrian walkways, bikeways, or trails on public easements no less than fifteen (15') feet in width.

#### **4.16 SITES OF HISTORICAL, CULTURAL, AND ARCHEOLOGICAL SIGNIFICANCE**

##### **4.16.01) Cultural Resource Preservation**

Subdivisions and resubdivisions shall be laid out to preserve significant cultural resources and unique natural features. Suitable public access to any cemetery may be required by the Commission. Any significant sites shall, where possible, be left undisturbed and may be considered in meeting the minimum open space requirements of the Subdivision Regulations.

##### **4.16.02) Cemeteries and Human Burials**

All cemeteries within the proposed subdivision shall be deeded to the Town of East Haddam, an existing cemetery association, a homeowners association, or other responsible party, as deemed appropriate by the Commission, along with a twenty (20) foot protective buffer, as measured from stonewalls surrounding a cemetery, or from any identified human burial in the absence of walls or other demarcated boundary.

##### **4.16.03) Archaeological Assessment**

An on-site archaeological assessment shall be required, if in the opinion of the Commission, there is a likelihood that significant cultural resources or undetected human burials will adversely impacted by construction activities associated with the proposed development.

In all subdivisions of twenty (20) acres or more, all applicants shall make written inquiry of the State Archaeologist to determine if there is evidence of sites of archaeological significance within the subdivision. The assessment shall be conducted in accordance with standards outlined in the Environmental Review Primer for Connecticut's Archaeological Resources. Permanent reference copies are on file at the State Historic Preservation Office and the East Haddam Planning and Zoning Office.

##### **4.16.04) Determination of Need**

The Commission's determination of need for an archaeological assessment shall be based on:

- a. The proximity to identified cemeteries, human burials, archaeological sites, historic sites; and/or
- b. The natural terrain features such as proximity to wetlands or watercourses, soils, slope, aspects of rock shelters, where factors reflect scientifically documented settlement patterns preferred by Native Americans or European Colonist.

In making this determination, the Commission shall seek the advice and comment from the Office of State Archaeology and/or State Preservation Officer. A letter seeking such advice shall be mailed within two (2) working days after the Commission's subdivision preliminary review, as defined in Section 3.03 of these regulations.

**4.16.05) Management Plans:** Cultural resource management plans submitted to the Commission by the applicant shall consist of:

- a. A written investigative report prepared by a professional archaeologist, containing appropriate historic documentation, a description of research design methods and techniques, and a description of sites, features and artifacts discovered as a result of the archaeological investigation. A list of accredited professional archaeologists is maintained by the State Historic Preservation Officer;
- b. An evaluation of impact of the proposed subdivision on identified cemeteries, human burials, archaeological sites and historic sites
- c. A description of measures to be undertaken by the applicant to mitigate adverse impacts of construction activities, on identified cultural resources. This may include an estimate of mitigation cost and time required for more extensive investigations. Measures may include open space dedication, conservation easements, redesign or relocation of roads, drainage features or buildings so as to minimize adverse impacts, or excavation and removal of cultural remains supervised by a professional archaeologist;
- d. Copies of all investigative reports and management plans shall be submitted to the Office of State Archaeology and State Historic Preservation Officer for review and comment prior to any Planning and Zoning public hearing. Comments received from the state officials shall be incorporated into the public hearing record. . The copies will also be distributed, by the applicant, to the East Haddam Historical Society, East Haddam Historic District Commission, East Haddam Library, Rathbun Library, and the Planning & Zoning Office.

#### **4.17 STONE WALLS AND FOUNDATIONS**

Stonewalls and foundations are significant man made features important to the character of the community. Proposed street, utility and future building shall be designed to preserve stonewalls and foundations to the maximum extent possible. The Applicant should allow the existing stonewalls to become lot lines as much as is feasible. The Commission may require conservation easements along stonewalls and foundations to ensure their future protection. The Commission may require the reconstruction of significant stonewalls and foundations by the subdivider where their preservation is not possible. In cases where stonewalls or foundations cannot be preserved, the Commission may require the features be photo-documented and mapped. Photographs shall be professional black and white images with scales to demonstrate size of the stone ruins. Five copies of these documents shall be submitted to the Commission. The copies will be distributed to the East Haddam Historical Society, East Haddam Historic District Commission, East Haddam Library, Rathbun Library, and the Planning & Zoning file.

#### **4.18 RURAL, RESIDENTIAL, & AGRICULTURAL BUFFER AREAS**

**4.18.01 Rural Buffer Areas, Natural or Historic Features.** When natural features of the land or historical features of the area have been identified as “Conservation Areas” in the Plan of Conservation and Development by the Commission or other advisory agencies, the Commission shall require the implementation of buffers to preserve the visual character of the natural or historic features. Said buffers shall be one hundred (100) in width but may be reduced to no less than twenty-five (25) feet in width after review and deliberation by the commission depending on the type of natural features, the topography, existing vegetation and the proposed design and plantings of such areas. It shall be the responsibility of the developer, subject to approval by the Commission, to provide an effective barrier that will reasonably buffer adjacent natural or historic features. It shall be the responsibility of individual lot owners where such buffers are established on their lots, to maintain the buffer in accordance with the designed intent, such responsibility to be implemented and enforced by a declaration of covenants and restrictions in a form to be approved by the Commission and approved in final version by its legal counsel.

**4.18.02) Residential Buffers Areas** When the application proposes a different type of housing or other use (e.g., multi-family, two-family, commercial, mixed use) or density of housing in the neighborhood, the Commission shall require the implementation of buffers to separate development types or density and protect property values. Said buffers shall be one hundred feet (100) in width but may be reduced to no less than twenty-five (25) in width after review and deliberation by the commission depending on the type of adjoining use, the topography, existing vegetation and the proposed design and plantings of such areas. It shall be the responsibility of the developer, subject to approval by the Commission, to provide an effective barrier that will reasonably buffer adjacent residential living areas. It shall be the responsibility of the individual lot owners where such buffers are established on their lots, to maintain the buffer in accordance with the designed intent, such responsibility to be implemented and enforced by a declaration of covenants and restrictions in a form to be approved by the Commission and approved in a final version by its legal counsel.

**4.18.03) Agriculture Buffer Areas** Buffers adjacent to actively farmed land shall be established around residential subdivisions. Said buffer areas shall be one hundred feet (100) in width but may be reduced to no less than fifty (50) feet in width as directed by the Commission, depending on the type of agricultural or farm use, the topography, existing vegetation and the proposed design and plantings of such areas. It shall be the responsibility of the developer, subject to approval by the Commission, to provide an effective barrier that will reasonably protect adjacent farming area. It shall be the responsibility of the individual lot owners where such buffers are established on their lots, to maintain the buffer in accordance with the designed intent, such responsibility to be implemented and enforced by a declaration of covenants and restrictions in a form to be approved by the Commission and approved in a final version by its legal counsel. In addition, the following statement shall be noted on the subdivision plan: "This property abuts or is in proximity to an active agricultural or farming operation which is a permitted zoning use. The policy of the Town is to encourage agricultural uses which are an integral component of the existing community character. Agricultural operations sometimes emit such things as noise, odor, or dust which are unavoidable byproducts of such operations." If the abutting actively farmed land changes use to residential, commercial, or industrial development, then these requirements shall be voided, and the implementing declaration and covenant shall so provide.

**4.18.04) New Roads** When a subdivision application proposes a new road and the development pattern proposal is not consistent with the existing pattern, spacing, density, or style of the residences that are on the existing street, the Commission shall require buffers. Said buffer shall be one hundred feet (100) in width from the existing road but may be reduced to no less than fifty (50) feet in width as directed by the Commission, depending on the type of adjoining use, the topography, existing vegetation and the proposed design and planting of such areas. It shall be the responsibility of the developer, subject to approval by the Commission, to provide an effective barrier that will reasonably protect adjacent area. It shall be the responsibility of the individual lot owners where such buffers are established on their lots, to maintain the buffer in accordance with the designed intent, such responsibility to be implemented and enforced by a declaration of covenants and restrictions in a form to be approved by the Commission and approved in final version by its legal counsel.

**4.18.05) Preservation and Maintenance of Buffer Areas** Such responsibility for the subsections .01 through .04 above shall be specifically noted on the subdivision plan and in the deeds of affected lots. Where a buffer area is part of a common open space, the responsibility for maintenance will be assumed by a homeowners association or by other arrangements that is acceptable to the Commission. The preservation and maintenance of the said buffer strip shall be recorded as a restrictive covenant and the buffer strip shall be maintained by the property owner as required in the restrictive covenant. The restrictive covenant language acceptable to the Commission must be used, and the execution and filing of such covenant shall be subject to review and approval by the Commission legal counsel. Said restrictive covenant shall be filed in the land records of the Town Clerk prior to endorsement of any record map.

**4.18.06) Waiver** The Commission recognizes that each parcel of property is unique in location, dimensions, orientation, topography, etc., and the various factors in the design of subdivisions are variable with relation to each other and to the above characteristics of the property. Therefore, in accordance with Connecticut General Statutes Section 8-26, the Commission may modify or waive, subject to appropriate conditions, such requirements as is in its judgment of the special circumstances and conditions that are not requisite to the interest of public health, safety and general welfare. See Section 7 of the Subdivision Regulations for specific conditions.

**4.18.07) Buffer Plant Requirements** All landscaping of the site shall be designed so as to protect and enhance the historic and rural character of the Town and the subject neighborhood, and to provide all-season visual buffers between the proposed use and any incompatible use of adjacent property through the use of grade separation, landscaping, buffer areas, and/or open spaces. Landscaped areas shall be strategically placed to enhance property values and to protect adjacent uses. All deciduous trees shall be 2 ½" to 3 ½" in caliper or larger, and shall have a minimum height of eight (8) feet; all evergreen trees shall have a minimum height of six (6') feet; and all shrubs shall be of a size at least one-third their mature potential.

**4.18.08) Use of Open Space as a Buffer** When the Commission determines the maximum amount of buffering required under these regulations is not sufficient in certain areas, the Commission may direct the applicant to create additional buffering through the use of the Open Spaces and Recreational Areas required in Section 4.09.

## **4.19 FIRE PROTECTION**

The Commission may refer any Subdivision application to the East Haddam Board of Fire Commissioners for recommendations concerning fire safety. Regardless of any such referral, the applicants may be required by the Commission to install water storage tanks or a suitable fire pond with associated hydrants and piping. Fire protection related

improvements shall include appropriate access and maintenance easements to be deeded to the Town when fire protection improvements have been completed and accepted by the Town.

#### **4.20 PUBLIC NOTICE**

a) **Notice to Adjoining Owner** The applicant shall notify all owner(s) of parcel(s) (as recorded on the last completed Grand List of the Town of East Haddam) within a distance of one hundred (100) feet from any boundary of said parcel(s) effected. Notification shall be in writing, certified mail return receipts requested, not less than fourteen (14) days prior to said hearing. No notice shall be required for the continuation of a public hearing once it has been open.

b) **Posting of Sign** No less than ten (10) days prior to the opening of any public hearing, the applicant shall post a sign on the property which is the subject of any application for subdivision. The face of the sign shall be provided with the following information in the following format;

**NOTICE OF PUBLIC HEARING**

**SUBDIVISION APPLICATION**

**DATE OF HEARING**

**TIME**

**LOCATION**

**EAST HADDAM PLANNING & ZONING COMMISSION APP. #**

It shall be the obligation of the Applicant to post such sign on the property in a location which is plainly visible from the nearest public street (or streets where applicable), and to maintain the sign until the opening of the public hearing. The sign shall be four (4) feet by four (4) feet in size. Lettering shall be clearly visible from the street. No sign need be posted for the continuation of a public hearing once it has opened. Signs are to be removed within seven days after the closing of the public hearing.

## SECTION 5

### **SUBDIVISION ROAD STANDARDS AND SPECIFICATIONS**

#### **5.01 PURPOSE AND AUTHORITY:**

These subdivision road standards and specifications (the "Standards") have been adopted for the following purposes: to promote the public health, safety and welfare: to assure protection of the public against the dangers of unsafe roads; to assure protection of the use, value and enjoyment of premises adjoining roads and to assure the protection of the Town against costs and expenses in the repair and maintenance of roads after acceptance which are avoidable through careful planning, appropriate design and competent construction.

#### **5.02 DESCRIPTION**

a) The Improvements set forth in this Section shall be required in all Subdivisions except where waived by the Commission pursuant to Section 8 of these Regulations. The subdivider shall also be required to install street signs, monuments, driveway aprons, loam and seeding, and shade trees. The Commission may require the installation of sidewalks, fire hydrants, dry hydrants and fire ponds, and street lights. Such Improvements shall be installed in accordance with Town, State highway, or utility company standards. The Applicant is encouraged to investigate and propose, after preliminary consultation with the Commission, "non-standard" streets, including boulevard street with variable-width medians, streets more narrow than specified herein, cul-de-sacs with less pavement than specified herein, etc.

b) The "Rules and Regulations of the State Board of Registration for Professional Engineers and Land Surveyors," dated January 1, 1966, with all revisions, shall apply to all technical work done in conjunction with subdivisions. The technical responsibilities of the Registered Professional Engineer and Land Surveyor in regard to subdivision work are:

i) The design of roads, both horizontal and vertical alignment; drainage systems, including the design and location of structures and pipe; sanitary sewer systems; sewage disposal systems; and water supply and distribution constitute professional engineering and as such shall be sealed by a Registered Professional Engineer. A land surveyor's seal or an architect's seal is not acceptable for this phase of land subdivision design work.

ii) The phase of land subdivision which relates to topography maps and the delineation of the boundary lines of the outside perimeter as well as the interior lots and streets constitutes land surveying within the meaning of the statute and as such shall be sealed by a Registered Land Surveyor. A professional engineer's seal or an architect's seal is not acceptable.

iii) Roadway widths and curve radii shall be adequate to satisfy emergency vehicle needs. Where deemed necessary by the Commission, drainage easements shall be obtained and all private roads and driveways shall be designed to prevent stormwater flows from entering a Town street.

#### **5.03 ROAD DESIGN AND CONSTRUCTION PROCESS:**

The following is a summary of the recommended sequential steps in the design and construction of improvements for existing and proposed subdivision roads.

1. Applicant approaches the Commission for guidance concerning road responsibility.
2. Functional road classification for existing and proposed new roads are determined by the Commission by reference to the criteria of these Regulations and the Plan of Conservation and Development.
3. Functional road classification and development situation combine to determine road responsibility.
4. Applicant's engineer consults these Standards for information regarding road design.
5. Applicant approaches Inland Wetlands and Watercourses Commission for input concerning wetlands crossings and other impacts.
6. Applicant approaches Commission with preliminary road and lot layout.
7. Final road design gains approvals from Inland Wetlands and Watercourses Commission and the Commission as part of total subdivision approval.
8. Applicant's Engineer provides written estimate of costs of all improvements, including, but not limited to, road construction and improvement, drainage, erosion and sedimentation control measures, street signs, and all other improvements required by the Commission in the subdivision approval by these Standards.

9. Applicant provides bonding in an amount and form acceptable to the Commission in accordance with Section 6.01 of these Regulations and these Standards.
10. Applicant provides payment of a fee in accordance with Town's Fee Schedule Ordinance.
11. Applicant applies in writing to the Board of Selectman for a Road Construction Permit in accordance with Town Ordinance.
12. As-built plans are required to be presented to the Commission prior to the release of any bond and the acceptance of any road by the Town.
13. State Highways. The subdivision plan shall be submitted to the State Department of Transportation if a proposed street in the subdivision intersects with a State Highway

**5.04 FUNCTIONAL ROAD CLASSIFICATION: FOR EXISTING AND PROPOSED ROADS:**

1. **ARTERIAL:** Route 82 –Norwich Road, Town Street, Norwich-Salem Road, Route 149 – Main Street, Moodus - East Haddam Road, Falls Road, Sipples Hill Road -, Route 151 -Moodus – Leesville Road, Plains Road, Town Street, [Route 148], Route 156 – Hamburg Road, Route 434- Mt Parnassus Road, Millington Road, Hopyard Road, Route 431 - River Road, and Route 609 – Leesville Road.
  
2. **COLLECTOR:** East Haddam-Colchester Turnpike, Tater Hill Road, Clark Hill Road, Smith Road, Falls Bashan Road, North Moodus Road, (junction of Sillmanville Road to Route 149), Landing Hill Road, and Haywardville Road.
  
3. **RESIDENTIAL:** Overlook Road, O'Connell Road, O'Connell Road Extension, Palmer Martin Road, A.P. Gates Road, Ackley Cemetery Road, Ackley Road, Alexander Road, Alger Road, Algonquin Trail, Andrews Road, Apple Lane, Babcock Road, Baker Lane, Baker Road, Ballahack Road, Banner Road, Banning Road, Barberry Lane, Beebe Road, Boardman Road, Bogel Road, Bogue Lane, Bone Mill Road, Bonfoey Road, Briarcliffe Road, Brooke Hill Road, Broom Road, Cantrall Road, Casner Road, Cedar Meadow Road, Cherry Swamp Road, Clark Hill Road, Cold Spring Road, Commerce Drive, Cove Road, Cragmere Road, Creamery Road, Creek Row, Cross Road, Daniel Peck Road, Daniels Road, Davison Road, Day Hill Road, Deer Run, Desmond Road, Dock Rock, Dolbia Hill Road, Early Road, East Lane, East Shore Drive, Echo Farm Road, Ed Williams, Road, Eli Chapman Road, Essex Turnpike, Fay Drive, Florida Road, Forest Way, Foxtown Cemetery Road, Geoffrey Road, Great Hillwood Road, Gristmill Road, Hall Kilbourne Road, Hedlund Road, Helon Cone Road, Hem Street, Hemlock Valley Road, Heritage Brooke Road, Highland Avenue, Hillside Road, Hilltop Road, Honey Hill Road, Hungerford Road, Joe Williams Road, Johnsonville Road, Jones Hill Road, Juda Lane, Lake Shore Drive, Lakeside Drive, Landing Hill Road, Launching Area Road, Laurel Lane, Long Pasture Lane, Longwood Drive, Lookout Drive, Lori lane, Lumberyard Road, Maple Avenue, Matthews Drive, Mill Road, Millington Road, Mitchell Road, Mott Lane, Neptune Avenue, Newberry Loop, Newberry Road, Nichols Road, Old East Haddam Road, Old Kentwood Road, Old Millington Road, Old Mt Parnassus Road, Old Orchard Road, Old Town Street, Olde Field Drive, Olmsted Road, Oriole Road, Parker Road, Petticoat Lane, Phelps Road, Porges Road, Powerhouse Road, Ray Hill Road, Ray Palmer Road, Red Mill Lane, Ridge Road, Ridgebury, Ridgewood Road, Ridgewood Road Extension, Robbie Road, Salem Road, Schulman Veselak, School Road, Scoville Landing, Shanaghan Road, Sheepskin Hollow, Silas Holmes, Sillmanville Road, Sims Lane Sims Road, Southwinds Road, Starr Road, Stockburger Road, Stocking Lot Road, Stony Brook Drive, Sunset Road, Tater Hill Road, Three Bridges Road, Town Farm Road, Town Road, Trowbridge Road, Valley Brook Road, Warner Road, West Cove Road, West Road, Westwood Road, Whip-O-Whill Terrace, Whitewood Road, Wickham Road, Wigwam Road, Wildwood Road, William F. Palmer Road, Woel Road, Woodmont Circle.
  
4. **PRIVATE:** All streets not listed above.
  
5. **SCENIC:** An Arterial, Collector, Residential or Unclassified road which has also been designated as a scenic road by applicable Connecticut State Statute and Town Ordinance.
  
6. **UNCLASSIFIED:** Any existing streets which are not listed above shall be classified by the Commission as Arterial, Collector, Residential or Private, or, if not a road, as a driveway or common driveway, based on a review of the Plan of Development and consultation with the Board of Selectmen. The Commission may, in its discretion, hold a public hearing to solicit such information, or may defer any classification until the completion of pending or potential adjudication by a court of competent jurisdiction. Classification of proposed streets shall be in accordance with the criteria of Section 5.05 of these

Regulations. Any such classification which the Commission makes under this subsection 6 shall be for the purpose of these Regulations only, and shall not be construed to be a determination or adjudication of any property or other rights among private parties.

7.DRIVEWAY: An access way serving a single lot.

8. COMMON DRIVEWAY: An access way serving 2 to 4 lots.

**5.05 CLASSIFICATION FACTORS:**

Proposed subdivision roads shall be classified as Arterial, Collector or Residential by the Commission after evaluating the following factors:

- a. The type of land use permitted in the subject zone and/or proposed for the Subdivision, such as, residential, commercial, industrial or institutional;
- b. The residential density and/or development intensity of any permitted land use;
- c. The number of acres and/or residential units and/or nonresidential buildings to be served, both immediately and in the future, including potential extensions of the proposed Streets and traffic considerations;
- d. The physical characteristics of the property through which the Street is proposed such as topographs, surface geology, water table level, and the like; and
- e. The Commission shall also consider recommendations from the Plan of Development.

## **5.06 DEVELOPMENT SITUATION - IMPROVEMENTS TO EXISTING ROADS:**

**A. GENERAL:** Whenever any Subdivision is proposed for land abutting or accessible by any existing improved, unimproved or unpaved Town Street and the Commission determines that approval of the subdivision plan would endanger the public safety or compromise the general welfare unless such Street were widened, straightened, altered and/or improved along the portion(s) of the Street abutting the proposed subdivision, the Commission may condition its approval upon completion of the widening, alteration and/or improvements of such Street in accordance with the standards set forth below, or may deny such application where conditions or the scope of improvements required cannot reasonably or reliably be determined without additional engineering design, field or survey work, or other information not set forth in the application and supporting information. Wherever practical, existing significant stonewalls and trees shall be preserved along the existing Street. Required improvements are determined by matching the development situation with or modifying the corresponding response set forth below. The Commission may waive these requirements after the Applicant has submitted a resolution from the Board of Selectmen requesting the modification or elimination of the improvements required by these Standards.

### **B. DEVELOPMENT ON ONE SIDE OF COLLECTOR STREET.**

Situation: 2 to 9 lot subdivision on one side of Collector Street by Applicant.

Response - At the Applicant's expense, Street improvements are to be shown by Engineer's plan with drainage upgrading. Deeded drainage easements and rights to drain to be provided only as the Selectmen or the Commission require. Along developed Street frontage, Street right of way is to be established at a minimum of 25 feet from the center of the existing right of way. Road Base is to be widened by Applicant along developed road frontage from the centerline to a minimum of 15 feet with greater widths required where alignment improvements are required. Road Base to be 8" compacted bank-run gravel (18" in rock) with 4" compacted processed gravel top-coat. Surface Treatment is to be provided by the Town of East Haddam at its option. The construction, dredging or enlargement of new and existing fire ponds may be required at the Applicant's expense. In the place of pond construction or improvements, installation of a holding tank or tanks may be required. All fire protection installed shall require dry hydrants as deemed necessary. Inspection of the road improvements by an Engineer is required. Final approval and acceptance of the Street improvements is the responsibility of the Board of Selectmen and is based upon compliance with these Regulations. All Street improvements are to be completed before lot conveyance, or bonding be posted to provide for completion of the Street improvements in accordance with Section 6.01.

Situation: 10 or more lot subdivision on one side of Collector Street by Applicant:

Response - At the Applicant's expense, road improvements are to be shown by Engineer's plan with drainage upgrading. Deeded drainage easements and rights to drain are required. Along developed Street frontage, Street right of way are to be established at a minimum of 25 feet from center of existing right of way. Road Base to be widened by Applicant along developed Street frontage from centerline to a minimum of 15 feet with greater widths required where alignment improvements are required. Road Base is to be 8" compacted bank-run gravel (18" in rock) with 4" compacted processed gravel top-coat. Surface Treatment is to be provided by the Town of East Haddam at its option. The construction, dredging or enlargement of new and existing fire ponds may be required at the Applicant's expense. In the place of pond construction or improvements, installation of a holding tank or tanks may be required. All fire protection installed shall require dry hydrants as deemed necessary. The cleaning out or enlargement of an existing fire pond with the installation of a dry hydrant may also be an alternative. Inspection of the Street improvements by an Engineer is required. Final approval and acceptance of the Street improvements is the responsibility of the Board of Selectmen and is based upon compliance with these Regulations. All road improvements are to be completed before lot conveyance, or bonding be posted to provide for completion of the road improvements in accordance with Section 6.01.

### **C. DEVELOPMENT ON BOTH SIDES OF COLLECTOR STREET.**

Situation: 2 to 9 lot subdivision on both sides of Collector Street by Applicant.

Response 4 - At the Applicant's expense, road improvements are to be shown by Engineer's plan with drainage upgrading. Deeded drainage easements and rights to drain shall be required. Along developed Street frontage, Street right of way to be established at a width of 50 feet and arranged to allow for improvements to the horizontal alignment along the Street adjacent to the proposed subdivision Road Base to be widened by Applicant along developed road frontage from centerline to a minimum of 15 feet with greater widths required where alignment improvements are required. Road Base to be 8" compacted bank-run gravel (18" in rock) with 4" compacted processed gravel top-coat. Surface Treatment of liquid asphalt in two applications is to be provided by the Applicant at their expense. The construction, dredging or enlargement of new and existing fire ponds may be required at the Applicant's expense. In the place of pond construction or improvements, installation of a holding tank or tanks may be required. All fire protection installed shall require dry hydrants as deemed necessary. The cleaning out or enlargement of an existing fire pond with the installation of a dry hydrant may also be an

alternative. Inspection of the Street improvements by an Engineer is required. Final approval and acceptance of the Street improvements is the responsibility of the Board of Selectmen and is based upon compliance with these Regulations. All Street improvements are to be completed before lot conveyance or bonding be posted to provide for completion of the Street improvements in accordance with Section 6.01.

Situation: 10 or more lot subdivision on both sides of Collector Street by Applicant.

Response 3 - At the Applicant's expense, road improvements are to be shown by Engineer's plan with drainage upgrading. Deeded drainage easements and rights to drain shall be required. Along developed easements and rights to drain shall be required. Along developed road frontage Street right of way to be established at a width of 50 feet and arranged to allow for improvements to the horizontal alignment along the Street adjacent to the proposed subdivision. Road Base to be widened by Applicant along developed road frontage from centerline to a minimum 15 feet with greater widths required where alignment improvements are required. Road Base to be 8" compacted bank-run gravel (18" in rock) with 4" compacted processed gravel top-coat. Surface Treatment of 1-1/2" base course and 1-1/2" top course bituminous asphalt surface in accordance with Conn. DOT standard 814 as amended, to be provided by the Applicant at its expense. The construction, dredging or enlargement of new and existing fire ponds may be required at the Applicant's expense. In the place of pond construction or improvements, installation of a holding tank or tanks may be required. All fire protection installed shall require dry hydrants as deemed necessary. The cleaning out or enlargement of an existing fire pond with the installation of a dry hydrant may also be an alternative. Inspection of the road improvements by an Engineer is required. Final approval and acceptance of the Street improvements is the responsibility of the Board of Selectmen and is based upon compliance with these Regulations. All Street improvements are to be completed before lot conveyance or bonding be posted to provide for completion of the Street improvements in accordance with Section 6.01.

#### **D. DEVELOPMENT ON ONE SIDE OF RESIDENTIAL STREET.**

Situation: 2 to 9 lot Subdivision on one side of Residential Street by Applicant.

Response - At the Applicant's expense, improvements are to be shown by Engineer's plan with drainage upgrading. Deeded drainage easements and rights to drain provided that drainage upgrading, deeded drainage easements and rights to drain are to be provided as the Board of Selectmen or the Commission require and shall be shown on the subdivision plan. Along developed Street frontage, Street right of way to be established at a minimum of 25 feet from center of existing right of way, with greater distances where improvements to the horizontal alignment can be achieved on the side of the Street adjacent to the proposed subdivision. Road Base to be widened by Applicant along developed Street frontage from centerline to a minimum of 12 feet with greater widths required where alignment improvements are required. Road Base to be 8" compacted bank-run gravel (18" in rock) with 4" compacted processed gravel top-coat. Surface Treatment is to be provided by the Town of East Haddam at its option. The construction, dredging or enlargement of new and existing fire ponds may be required at the Applicant's expense. In the place of pond construction or improvements, installation of a holding tank or tanks may be required. All fire protection installed shall require dry hydrants as deemed necessary. Inspection of the Street improvements by an Engineer is required. Final approval and acceptance of the Street improvements is the responsibility of the Board of Selectmen and is based upon compliance with these Regulations. All Street improvements are to be completed before lot conveyance or bonding be posted to provide for completion of the Street improvements in accordance with Section 6.01.

Situation: 10 or more lot Subdivision on one side of Residential Road by Applicant.

Response - At the Applicant's expense, improvements are to be shown by Engineer's plan with drainage upgrading. Deeded drainage easements and rights to drain shall be required. Along developed Street frontage, Street right of way to be established at a minimum of 25 feet from center of existing right of way, with greater distances where improvements to the horizontal alignment can be achieved on the side of the Street adjacent to the proposed subdivision. Road Base to be widened by Applicant along developed road frontage from centerline to a minimum of 12 feet with greater widths required where alignment improvements are required. Road Base to be 8" compacted bank-run gravel (18" in rock) with 4" compacted processed gravel top-coat. Surface Treatment is to be provided by the Town of East Haddam at its option. The construction, dredging or enlargement of new and existing fire ponds may be required at the Applicants expense. In the place of pond construction or improvements, installation of a holding tank or tanks may be required. All fire protection installed shall require dry hydrants as deemed necessary. Inspection of the Streets improvements by an Engineer is required. Final approval and acceptance of the Street improvements is the responsibility of the Board of Selectmen and is based upon compliance with these Regulations. All Street improvements are to be completed before lot conveyance or bonding be posted to provide for completion of the Street improvements in accordance with Section 6.01.

**E. DEVELOPMENT ON BOTH SIDES OF RESIDENTIAL STREET.**

Situation: 2 to 9 lot Subdivision on both sides of Residential Street by the Applicant.

Response - At the Applicant's expense, improvements are to be shown by Engineer's plan with drainage upgrading. Deeded drainage easements and rights to drain shall be required. Along developed Street frontage, Street right of way to be established at a width of 50 feet and arranged to allow for improvements to the horizontal alignment along the Street adjacent to the proposed subdivision. Road Base to be widened by Applicant along developed Street frontage to a minimum of 24 feet with greater widths required where alignment improvements are required. Road Base to be 8" compacted bank-run gravel (18" in rock) with 4" compacted processed gravel top-coat. Surface Treatment of liquid asphalt in two applications is to be provided by the Applicant at their expense. The construction, dredging or enlargement of new and existing fire ponds may be required at the Applicant's expense. In the place of pond construction or improvements, installation of a holding tank or tanks may be required. All fire protection installed shall require dry hydrants as deemed necessary. Inspection of the Street improvements by an Engineer is required. Final approval and acceptance of the Street improvements is the responsibility of the Board of Selectmen and is based upon compliance with these regulations. All Street improvements are to be completed before lot conveyance or bonding be posted to provide for completion of the Street improvements in accordance with Section 6.01.

Situation: 10 or more lot Subdivision on both sides of the Residential Street by the Applicant.

Response - At the Applicant's expense, improvements are to be shown by Engineer's plan with drainage upgrading. Deeded drainage easements and rights to drain shall be required. Along developed Street frontage, Street right of way to be established at a width of 50 feet and arranged to allow for improvements to the horizontal alignment along the Street adjacent to the proposed subdivision. Road Base to be widened by Applicant along developed Street frontage to a minimum of 24 feet with greater widths required where alignment improvements are required. Road Base to be 8" compacted bank-run gravel (18" in rock) with 4" compacted processed gravel top-coat. Surface Treatment of 1-1/2" base course and 1-1/2" top course bituminous asphalt surface in accordance with Conn. DOT Standard 814 as amended to be provided by the Applicant at its expense. The construction, dredging or enlargement of new and existing fire ponds may be required at the applicant's expense. In the placed of pond construction or improvements, installation of a holding tank or tanks may be required. All fire protection installed shall require dry hydrants as deemed necessary. Inspection of the Street improvements by an Engineer is required. Final approval and acceptance of the Street improvements is the responsibility of the Board of Selectmen and is based upon compliance with these Regulations. All Street improvements are to be completed before lot conveyance or bonding be posted to provide for completion of the Street improvements in accordance with Section 6.01.

**F. DEVELOPMENT ON EXISTING PRIVATE STREET.**

Applicant is urged to contact private association for standards and specifications regarding Street improvements and development. The Commission may apply the applicable standards and specifications of the private association or shall select the most appropriate standards from among those applicable to Town Streets or new Private Streets, making allowance for pre-existing, non-conforming rights of way.

**G. DEVELOPMENT ON EXISTING SCENIC STREET.**

Road improvements shall be as permitted or required by applicable State statute or Town ordinance by reference to the provisions of this Section 5 which are applicable to the underlying road classification of such Scenic road, i.e., Arterial, Collector, Residential or Unclassified.

**5.07 DEVELOPMENT SITUATION - CONSTRUCTION OF NEW PUBLIC STREETS:**

Revised 4/23/97: Effective Date: 5/30/97

1. New Subdivision Streets shall conform to the following design criteria. The Commission shall select the class or classes of Streets to be constructed in a Subdivision after consideration of the criteria contained in this Section 5 and the Plan of Development. Proposed Streets in a Subdivision shall be compatible with existing or projected thoroughfares; Shall have free access to or be a continuation of one or more accepted Public Streets or approved Private Streets, and shall be so constructed as to present no safety hazard at their intersections with such Streets. Streets planned for the present or future use of other than strictly local traffic and Streets indicated on the Plan of Conservation and Development as Collector Streets be of such width as considered necessary by the Commission.

2. Streets shall follow natural contours wherever practical and shall have grades of not less than 1.0% Banks adjoining a Street right of way shall have a slope of not more than one foot vertical to two feet horizontal, except when necessarily modified by rock formation. Grade requirements shall apply to the full width of street rights-of-way. Dead-end streets shall

end in a turning circle of at least a 50 feet radius. See diagram entitled "Typical cul de sac:" All streets in a subdivision shall be constructed and surfaced in accordance with standards as shown in this Section. Final requirements for Street bond release shall be in accordance with Section 6.01.

3. Cul de Sac Street are intended to provide residential areas with adequate vehicular access while maintaining privacy and minimizing traffic flow. Therefore, cul de sac streets shall service no more than 20 lots nor exceed 2000 feet in length. The Commission may grant a waiver in length not to exceed an additional 450 feet and may allow more than 20 lots when special conditions exist such as: 1) future Street extension; 2) the extension shall reduce the overall impact on the site and preserve significant natural features; or 3) other good cause determined by the Commission. Street construction methods shall conform to these regulations and accepted standards in accordance with Conn. DOT form 814 as amended. The turn-around shall be constructed with a right-of-way width stub extension and there shall be a notation on the subdivision plan stating that all segments of the turn-around outside the normal right of way shall be returned to the record owners of adjacent properties at such time as the turn-around is eliminated. Such notation shall also be entered on the deeds for the lots affected. All Streets right-of-ways shall extend to the property line of adjoining parcels.

4. If a development includes land reverting to abutting owners, the surplus Surface Treatment shall be removed and the area regraded and seeded at the Applicant's expense. Dead end streets with less than 7 lots and less than 600 feet in length may be terminated with turn arounds other than turn-arounds such as a "T", or other design acceptable to the Commission upon advice of the Town's engineering consultant or public safety officials. No more than 5 lots shall have any frontage on, or driveway access to, the arc of the turn-around.

5. These standards allow the creation of Loop Streets, provided such Streets do not exceed a length of 3000 feet. The total length of any Loop Street, plus any and all Streets accessible only from such Loop Street, shall also not exceed 3000 feet.

6. These standards allow Cul-de-sac Streets to be constructed off of other Cul-de-sac Streets, provided that the total Street lengths, as defined in these Regulations, does not exceed a length of 2,000 feet nor serve more than twenty (20) lots. See the waiver provision of the third paragraph of this Section 5.07.

#### **5.08 DEVELOPMENT SITUATION - CONSTRUCTION OF NEW PRIVATE STREETS**

Any Subdivision proposing the use of Private Streets shall submit an acceptable Street maintenance agreement to the Commission as part of the Application. This agreement shall demonstrate the ability of the Subdivision to maintain its roadways in perpetuity to the satisfaction of the Commission.

Subdivisions proposing the use of Private roads shall submit to the Commission, as part of the Application, provisions for the creation of a homeowners association with full authority to maintain Private roads through the use of mandatory membership and assessment, such association to have the powers of enforcement, and to comply in all respects, with the Connecticut Common Interest Ownership Act as amended and in effect from time to time. In the alternative, the Applicant may present evidence of acceptance of existing Private roads which complies with the foregoing requirements. Regardless of the manner of ownership of the Private Street, the instrument of conveyance must include provisions satisfactory in form and substance to the Commission to ensure:

- a) The continued use of such Street for the intended purposes.
- b) The continuity of proper maintenance for the Private Street, appurtenant stormwater drainage systems, walkways, and other improvements depicted on the final plans or required pursuant to these regulations.
- c) Adequate insurance protection.
- d) Methods of assuring the perpetual availability of funds required for such maintenance and insurance.
- e) Recovery for loss sustained by casualty, condemnation or otherwise.

The boundary lines of all Private Streets shall be set in the field and marked by permanent monuments at angle points and points of curvature and tangency and at points of intersection with any Street or perimeter line within the proposed Subdivision and at such other points as may be required by the Commission to insure identification in the field.

At the time the approved subdivision plan is filed, the Applicant shall record on the East Haddam Land Records all legal documents required to ensure the aforesaid guarantees.

## **5.09 INSPECTION**

**a)** All subdivision Improvements to be dedicated to the Town shall be inspected by the Commission or such agent as may be designated by the Commission in consultation with the Board of Selectmen. In addition, the subdivider shall, prior to the commencement of construction, arrange with the Commission and the Board of Selectmen for the employment of an inspector to supervise the installation of all Improvements. Such inspector shall be the design engineer or an individual(s) approved by the First Selectman; shall be answerable and report, as requested, to the Commission and the Board of Selectmen, acting by and through the First Selectman; and all fees and expenses of such Clerk of the Works shall be payable by the subdivider, per the Town Ordinance.

**b)** Inspections shall be made at the following stages of construction:

- 1) When road and utility rough grading is complete.
- 2) When drainage and all other underground facilities are installed, but prior to any backfilling.
- 3) During construction of street base courses.
- 4) During construction of bituminous concrete surface and binder courses.
- 5) During the placing of concrete for sidewalks.
- 6) When curbing is complete.
- 7) A final inspection shall be made when all Improvements are complete, and before acceptance by the Town.

**c)** The Subdivider shall not proceed to work on any stage subsequent to the first stage until such inspection has been made by the Commission or its appointed agent, on the preceding stage and approval in writing has been obtained on the preceding stage. At least two full working days notice, shall be given by the developer to the Commission or its appointed agent for each inspection.

**d)** The inspector shall submit a final inspection report, along with all test results and other documentation generated during the course of the construction to the Commission, the Director of Public Works, and the Office of the First Selectmen. Such inspection report shall bear the seal and signature of a professional engineer. A land surveyor's seal or an architect's seal is not acceptable.

**e)** The applicant shall also submit an As-Built plan for all Improvement (Public or Private). Such As-Built plan shall document accurately all Improvements including all field changes, and shall bear the seal and signature of a land surveyor. A professional engineer's seal or an architect's seal is not acceptable.



Utilities	Underground (Commission may allow overhead utilities where excessive conditions such as rock or wetlands exist).
Fire Protection	Refer to Fire Department review recommendations
Lighting	May be required at every intersection and in areas the Commission requires.
Road Signs	All name and safety signs (stop, speed limit, etc.) must be erected
	All painted lines (stop bars, pedestrian crossing, centerlines, etc.) must be installed
Landscaping	As required by the Commission.

2. New Residential Street Design Criteria – Public or Private

Clearing	Trees and Brush to be chipped, burned or removed.
Stumps	To be removed or buried above the water table (burial location determined by Town Sanitarian)
Right of Way Width	50 feet min.

18 to 24 feet (travel width) The Commission will review proposed traffic counts, road curvature, site lines and other consideration in determining the minimum width. Unless a boulevard, in which case the Applicant shall propose special typical cross section to the Commission. Alternative porous pavement substitutes may be implemented if approved by the Commission.

26 feet minimum – area not paved shall be covered with topsoil and seeded  
8" compacted Bank-Run Gravel  
4" compacted Process Gravel

Surface Treatment	1 1/2" bituminous Binder 1 1/2" bituminous Top Course
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None, unless required by the Commission, in which case, curbing shall be 6" bituminous or "cape-cod" style.

Drainage Design in accordance with Conn. DOT Drainage manual and Section 4.2 of these Regulations.

Design Speed	25 MPH
--------------	--------

1% min, 10% max, except that cul-de-sac and 50' of road leading to cul-de-sac shall be 5% max.

Curve Radius	150 feet min.
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Tangent	50 feet min.
---------	--------------

Intersection Sight Distance 200 feet min.

Stopping Sight Distance	200 feet min.
-------------------------	---------------

Cross Slope	1/4" per feet
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Vertical Alignment	Max 3% within 50 feet of intersection
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Angle of Intersection	90 degrees preferred, 60 degrees minimum only when approved by the Commission.
-----------------------	--------------------------------------------------------------------------------

Curb Radius	25 feet min.
-------------	--------------

Intersection Offset	500 feet min with Collector
---------------------	-----------------------------

	150 feet min. with Residential 125 min. with Private
Approach Tangent	30 feet min.
Sidewalks	May be required in areas of high existing or projected pedestrian activity with handicap ramps at intersections.
Sidewalk Width	4 feet
Sidewalk Offset	6 feet from curb line.
Utilities	Underground (Commission may allow overhead utilities where excessive conditions such as rock or wetlands exist).
Fire Protection	Refer to Fire Department review recommendations.
Lighting	May be required at every intersection and in areas the Commission requires.
Road Signs	All name and safety signs (stop, speed limit, etc.) must be erected.
	All painted lines (stop bars, pedestrian crossing, centerlines, etc.) must be installed.
Landscaping	As required by the Commission.

## **5.11 DRIVEWAY DESIGN CRITERIA:**

Revised: 2/25/97 Eff: 4/1/97

a) Driveway Standards. To promote traffic safety and prevent or minimize drainage and icing problems, driveways for all proposed subdivision lots shall be designed and constructed in conformance with the minimum provisions of this Regulation, unless requirements are waived as per the provisions noted below. To enable the Commission to verify compliance, all subdivision proposals shall depict driveway locations, proposed grading, tree and brush removal, drainage improvements and, as appropriate, other construction details. Upon approval, minor on-site modifications may be authorized by the Planning and Engineering staff, provided the required driveway standards are complied with.

b) Proposed lots which cannot be served by a driveway conforming with the required standards shall not be approved by the Commission unless requirements are specifically waived in accordance with Section 8 of these Regulations. Said waivers may be approved in situations where no detrimental traffic or drainage impact is anticipated; where the driveway involves unusual site or roadway conditions or where roadway improvements are pending or anticipated.

Unless a waiver is authorized, driveways shall comply with the following standards:

- 1) Driveways shall conform with any curb cut and driveway standards established by the Zoning Regulations, the Board of Selectmen and the Engineer and, as appropriate, the State Department of Transportation.
- 2) Unpaved driveways shall not exceed a slope of eight (8%) percent; paved driveways shall not exceed a slope of twelve (12%) percent.
- 3) Driveways shall be designed to prevent stormwater flows from entering a Town roadway and, wherever possible, the Town right-of-way. Privately owned and maintained drainage diversion swales, detention areas and/or dry wells shall be utilized to the greatest extent possible. Culverts, fifteen (15") inches in diameter at a minimum, shall be used when crossing Town drainage ways.

Whenever a private drainage swale or private detention area is utilized in diverting driveway water from the Town right-of-way, the owner of the subject lot(s) shall be responsible for maintaining the depicted swale or detention area and any culverts in accordance with the approved design. To ensure proper maintenance, no Certificate of Use and Compliance shall be issued on the subject lot until a deed restriction, approved by the Planning and Zoning Staff, is filed on the Land Records. Said deed restriction shall clearly note the maintenance responsibility and, subject to proper notification by the Town, it shall allow the Town to undertake any necessary maintenance activity and charge the property owner for expenses.



150 feet min. 4 acre zone

Utilities                      Underground (Commission may allow overhead utilities where excessive conditions such as rock or wetlands exist).

Fire Protection                      Passing areas provided 800 feet max. separation. (areas to be 10 feet x 60 feet)

3. Common Driveway Serving 3 or 4 Lots.

Right of Way                      25 feet min.

Driveway Width 18 feet min. 20 feet max  
12 feet min. at split to 2 Lots  
10 feet min. at split to 1 Lot

Paving                      15 foot apron and slopes 8% or over - 2" bituminous single course

Curbing                      6" bituminous. Only used where Commission deems necessary.

Base                      12" bank-run Gravel  
The base shall extend one foot past the paving as a shoulder on each side.

Drainage                      As required based on 10 year storm calculations.

Grade                      1% min. 12% max.

Vertical Alignment                      8% change in 10 feet

Curb Radius                      5 feet min.

Intersection Offset                      75 feet min. 1/2 acre zone  
100 feet min. 1 acre zone  
125 feet min. 2 acre zone  
150 feet min. 4 acre zone

Utilities                      Underground (Commission may allow overhead utilities where excessive conditions such as rock or wetlands exist).

**SECTION 6 - INSURANCE, BOND REQUIREMENTS, CERTIFICATE OF USE,  
BOND RELEASE, AND STANDARD AGREEMENT FOR INSTALLATION OF IMPROVEMENTS**

**6.01 INSURANCE**

a) The Subdivider shall file with the Commission a general liability insurance policy. This policy shall be of the same term as the Performance Bond and shall be extended in conformance with any extension of the Performance Bond.

b) The policy shall insure the Town of East Haddam and its agents, and the Subdivider and shall cover all his operations in the development involving existence and maintenance of property and buildings and contracting operations of every nature including all public Improvements. Said policy shall have the following limits:

Property Damage (including automobile)  
Each Accident: Not less than \$250,000

Bodily Injury (including automobile)  
Each Person: Not less than \$1,000,000  
Each Accident: Not less than \$1,000,000

**6.02 PERFORMANCE BOND**

A Performance Bond shall be posted by the Subdivider prior to the commencement of construction of any Improvement or work on any lot to insure the completion of required Improvements and utilities in the event the Subdivider shall fail to install same within two (2) years from the date of the Bond. The term of the Performance Bond may be extended by the Commission upon approval of a petition from the developer to the Commission requesting an extension subject to agreement of such extension by the Surety.

In computing the amount of the Bond, the Commission shall include the construction cost of the following items:

a) The construction cost of all required Improvements, including storm drainage system, erosion and sedimentation control measures, roads and pavements, sidewalks and curbs, trees, plantings, grading, setting of monuments, and any other requirements made as a condition for subdivision approval or depicted on the endorsed Final Subdivision Plan, Plan and Profile, Erosion and Sedimentation Control Plan, or any other plan as approved by the Commission.

b) Estimated costs shall be those that would allow for the Town advertising and awarding a contract for construction of the Improvements.

c) Costs shall be projected to a point at the end of the Performance Bond term. Any extension of the term of the Performance Bond may result in an adjustment as to the Bond total.

d) The total estimated cost of the Performance Bond shall also include a 15% addition to cover contingencies and Commission's Engineering.

e) Where a subdivision is to be developed in phases, the subdivider may petition the Commission in writing for permission to post a Performance Bond covering the costs itemized in paragraphs (6.a) through (6.d) above, related to those Improvements and utilities located within or required to serve one or more phases rather than for the entire development. Similar permission shall be obtained by the subdivider prior to commencing development of any or all additional phases. Where the subdivider bonds in phases as authorized in this paragraph, no Improvement, as that term is defined in these Regulations, shall be commenced in any phase for which no bond has been posted.

f) As used in these Regulations, the term "Performance Bond" shall refer to one of the following methods of assuring completion of Subdivision Improvements:

1) Cash in the form of a certified check; or a passbook, assigned to the Town by assignment forms prescribed by the Commission's legal counsel. The issuing bank ("Surety") shall be one maintaining offices in either Middlesex, Hartford or New London Counties.

2) A Letter of Credit in favor of the Town in the form prescribed by the Commission's legal counsel. Such Letter of Credit shall be issued only by a bank or comparable lending institution maintaining offices in the State of Connecticut. The issuing bank ("Surety") shall be one maintaining offices in Middlesex, Hartford or New London Counties.

3) A restrictive covenant, in a form prescribed by the Commission's legal counsel, to be filed on the Land Records of the Town of East Haddam, prohibiting the sale of any subdivision lot(s) until such time as all Improvements are completed in accordance with these Regulations, or until the incomplete portions of such Improvements are bonded by one of the methods in the preceding two (2) paragraphs.

The above-referenced forms shall be as provided by the Town and shall be the only ones acceptable to the Commission. The amount of the Bond shall be the sum which the Commission shall require. The completion date of all required Improvements shall be as required by the Commission, but, in no event, longer than the period set forth in Chapter 126 of the Connecticut General Statutes.

**g)** For all Performance bond documents: If the Subdivision Applicant is a corporation, then the corporate seal must be shown in addition to the seal of the lending institution issuing the passbook assignment or Letter of Credit, and a corporate resolution must be provided indicating that the corporate officer executing the bond documents has authority to do so. If the subdivision applicant is a partnership, then a partnership resolution must be provided indicating that the partner executing the bond documents has authority to do so. Any corporation shall provide a Certificate of Good Standing from the Connecticut Secretary of the State; any limited partnership shall provide a Certificate of Legal Existence from the Connecticut Secretary of the State; out-of-state applicants shall present evidence from the Secretary of the State that they are authorized to do business in Connecticut.

**g)** If at any time, the bond required by this Section shall not be in effect for incomplete or unaccepted Improvements, the Commission may file a caveat on the Land Records warning potential purchasers of such fact; or may void the subdivision following a public hearing with notice to the Subdivider and property owner(s).

### **6.03 BUILDING PERMIT, CERTIFICATE OF OCCUPANCY**

Before any Building Permit is issued for the construction of any building in such subdivision on a lot which fronts on a Subdivision Street which has not been accepted by the Town as a Public Street, the Subdivider shall complete such Street, in accordance with the specifications up to the farther side line of such lot, to a stage in construction at which only final surfacing of the Street remains to be done before completion of the Street; the foregoing shall not apply to Street trees, sidewalks, or other types of Street-related Improvements not required for vehicular travel, but shall apply to the installation of Street name signs to facilitate the provision of emergency services. The balance of the work on such Street, and all other Public Improvements, shall be bonded in accordance with the provisions of this Section 6.0. In addition, water and effluent disposal, be it by individual on-site systems or community systems, shall be operational and accepted by the appropriate Town or State agencies prior to the issuance of a Certificate of Occupancy of the building on any lot.

### **6.04 BOND RELEASE**

**a)** Prior to the release of the Performance Bond, the subdivider shall present a Maintenance Bond equal to ten (10%) percent of the Performance Bond. Such Bond shall be for the period of one (1) year and shall guarantee the Improvements installed against defects in materials or workmanship, or damage caused to the Improvements by any construction activity in the subdivision. The said one-year period shall commence upon the effective date of the acceptance of any Street or other Public Improvements by that agency having authority for such acceptance.

**b)** Application for the release of any Bond upon completion of all required Improvements shall include the submission of scale as-built drawings which shall include all changes in the plans as authorized by the Commission or the Commission's Engineer during the course of construction. The "As-Built" drawings shall be signed and sealed by a Connecticut Registered Professional Engineer and/or a Land Surveyor Licensed in the State of Connecticut.

**c)** Upon submission of a written report from the Commission's Engineer that all or a certain specified stage in the construction of Improvements has been satisfactorily completed, the applicant may request that the Commission reduce any outstanding bond to reflect the cost of construction of the remaining Improvements. The Commission shall grant no more than three (3) such reductions prior to the final release of bonds, and the Commission may refuse such reductions if it finds that the construction of any Improvements in violation of any provision of these Regulations or the plans or conditions for any subdivision approved hereunder.

## **6.05 AGREEMENT FOR INSTALLATION OF IMPROVEMENTS**

For any subdivision involving the installation of public Improvements, the subdivider shall, prior to the endorsement of the Final Plans, enter into a written agreement with the Town to perform such Improvements, which agreement shall be in the form specified by the Commission.

## **6.06. DEFINITION OF "IMPROVEMENTS"**

For the purposes of this Section 6.0, the term "Improvements" shall include any change or alteration to the existing conditions of the subdivision site for the purpose of complying with these Regulations, or any approval granted hereunder, or depicted on the subdivision plans approved hereunder, or rendering the site more suitable for development and/or habitation. As used in these Regulations, Improvements include, but are not limited to, construction and installation of roadways, paved or gravel streets, curbs, gutters, snow shelf, utilities, street signs, monuments, drainage facilities, erosion and sedimentation control measures, earth filling or removal, seeding, grading, and shade trees and plantings, when and if the foregoing are required by applicable provisions of these Regulations.

## **SECTION 7 - WAIVER**

The Commission recognizes that each parcel of property is unique in location, dimensions, orientation, topography, etc., and the various factors in the design of subdivisions are variable with relation to each other and to the above characteristics of the property. Therefore, in accordance with Connecticut General Statutes Section 8-26, the Commission may modify or waive, subject to appropriate conditions, such requirements as is in its judgment of the special circumstances and conditions that are not requisite to the interest of public health, safety and general welfare. In considering a modification or waiver under this Chapter, the Commission shall only approve such modification or waiver upon a finding that all of the following conditions are met:

- a) Conditions exist on the subject property which are not generally applicable to other land in the area;
- b) Said conditions would render the subject property unusable for any viable use permitted in the subject zone if these Regulations were strictly applied;
- c) Said conditions were not created by the property owner nor by his predecessor(s) in title;
- d) The granting of the modification or waiver would be in harmony with the purpose and intent of these Regulations;
- e) The granting of the modification or waiver would not have a significant adverse impact on adjacent properties values, the public health, safety, and welfare, and would not be in violation of the recommendations of the Plan of Development, as the same may be amended from time to time.

Any request for waiver under this Section shall be stated on the Subdivision Application form, and, if granted, shall be noted on the Subdivision Plans with a reference to the lot(s) affected, and the Section of these Regulations modified or waived, and the extent or nature thereof. In granting or denying any request for waiver, the Commission shall state upon the record the reasons for such action.

## **SECTION 8- AMENDED SUBDIVISION**

### **8.0 Regulation**

An application shall be filed with the Commission along with a fee for any request for an amended subdivision lot line change. An amended subdivision may be approved by the Commission through site plan review when such amended subdivision in and of itself does not constitute a new subdivision or resubdivision. All provisions of the original approved subdivision or resubdivision shall be complied with. Upon approval of the Commission, the applicant shall file with the Town a revised mylar referenced to the original mylar.

**APPENDIX A**                      Revisions to the East Haddam Subdivision Regulations

- Section 3.04 a) viii Final Subdivision Application - Removes need to produce CD formatted plans for applications.  
Effective Date - November 1, 2006
- Section 3.04 (i) Final Subdivision Application - Requires CD formatted plans for subdivision filing.  
Effective Date - November 1, 2006
- Section 3.05 b) V Subdivision Plan - ties to a "State Coordinate".                      Effective Date - November 1, 2006
- Section 4.01 b) Adds that the Erosion and Sediment Control Worksheet shall be part of the subdivision submittal.  
Effective Date - November 1, 2006
- Section 4.02.2 Notes that the Connecticut Stormwater Design Checklist shall be used.  
Effective Date - November 1, 2006
- Section 4.02.6 Maintenance plan for stormwater facilities    Adds that a declaration shall be filed describing the  
responsibilities of the owner of such facilities.                      Effective Date - November 1, 2006
- Section 4.06 (e) Minimum Buildable Land Requirements - Wetlands Commission Changed the term "Regulated Area" to  
"Upland Review".                      Effective Date - November 1, 2006
- Section 4.14.04 Adds that street tree and buffer planting plans shall be designed by a landscape architect and a planting  
timeline shall be supplied.                      Effective Date - November 1, 2006
- Section 5.11 Driveway Design All Driveways                      The base shall extend one foot pass the paving as a shoulder on each  
side.                      Effective Date - November 1, 2006
- New Appendix B - Adds the Erosion and Sediment Control Checklist  
Effective Date - November 1, 2006
- New Appendix C - Adds the Connecticut Stormwater Quality Manual Worksheet  
Effective Date - November 1, 2006
- New Appendix D - Adds the stormwater maintenance declaration.                      Effective Date - November 1, 2006
- Requirement for filling of test pits. Section 4.04.                      Effective date – April 1, 2011
- Buffers for Rural, Residential, & Agricultural Areas – Section 4.18                      Effective date – April 1, 2011
- Minimum Square Amendments – Section 4.06.1 & 4.06.2                      Effective date – January 1, 2014
- Appendix E                      Suitable Soils                      Effective date – January 1, 2014
- Stormwater Management Section 4.02                      Effective Date – October 1, 2016

## Appendix B

**b) E&S Plan Checklist** All Plans shall contain the information requested in the E&S checklist provided in the 2002 Guidelines for Soil Erosion and Sediment Control found in Chapter 3 and list underneath.

### 1. Narrative

- \_\_\_ 1.1 Purpose and description of project.
- \_\_\_ 1.2 Estimates of the total area of the project site and the total area of the site that is expected to be disturbed by construction activities.
- \_\_\_ 1.3 Identification of site-specific erosion or sediment control concerns and issues.
- \_\_\_ 1.4 The phases of development if more than one phase is planned.
- \_\_\_ 1.5 The planned start and completion dates for each phase of the project.<sup>2</sup>
- \_\_\_ 1.6 Either provide or identify where in the E&S plan the following information is found:
  - \_\_\_ 1.6.1 the design criteria, construction details and maintenance program for the erosion and sediment control measures to be used.
  - \_\_\_ 1.6.2 the sequence of major operations within each phase, such as installation of erosion control measures, clearing, grubbing, excavation, grading, drainage and utility installation, temporary stabilization, removal of temporary erosion control measures
  - \_\_\_ 1.6.3 the time (in days) required for the major operations identified in the sequence
- \_\_\_ 1.7 Identify other possible local, state and federal permits required.
- \_\_\_ 1.8 Identify the conservation practices to be used.
- \_\_\_ 1.9 A listing of all other documents to be considered part of the E&S plan (e.g. reports of hydraulic and hydrologic computations, boring logs, test pit logs, soil reports, etc.)

### 2. Support Documents (as may be needed to support Engineering Designs)

#### 2.1 Hydraulic calculations

- \_\_\_ 2.1.1 Size and locations of existing and planned channels or waterways with design calculations and construction details.
- \_\_\_ 2.1.2 Existing peak flows with calculations
- \_\_\_ 2.1.3 Planned peak flows with calculations
- \_\_\_ 2.1.4 Changes in peak flows
- \_\_\_ 2.1.5 Off-site effects of increased peak flows or volumes
- \_\_\_ 2.1.6 Design calculations and construction details for engineered measures used to control off-site erosion caused by the project
- \_\_\_ 2.1.7 Design calculations and construction details for engineered measures used to control erosion below culverts and storm sewer outlets
- \_\_\_ 2.1.8 Design calculation and construction details for engineered measures used to control groundwater, i.e. seeps, high water table, etc.

#### 2.2 Boring logs, test pit logs, soils reports, etc. \_\_\_

### 3.0 Site Drawing(s) Checklist

#### 3.1 Jurisdictional Features Required on All Maps or Drawings

- \_\_\_ 3.1.1 North arrow
- \_\_\_ 3.1.2 Scale (including graphical scale)
- \_\_\_ 3.1.3 A title block containing the name of the project, the author of the map or drawing, the owner of record for the project, date of drawing creation and any revision dates
- \_\_\_ 3.1.4 Property lines
- \_\_\_ 3.1.5 Legend identifying the symbols used
- \_\_\_ 3.1.6 For plans containing E&S measures which require an engineered design, the signature and seal of a professional engineer licensed to practice in Connecticut

#### 3.2 Site Locus Map

- \_\_\_ 3.2.1 Scale (1"= 1000' recommended)

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<sup>2</sup>These are often subject to change depending on markets, financing, permit approvals and weather conditions. A change in a start date can cause a restriction or prohibition in the use of proposed measures, and thereby require revisions to the E&S plan.

- \_\_\_ 3.2.2 Project location (show property boundaries and at least the area that is within 1000 feet of the property boundaries)
- \_\_\_ 3.2.3 Roads, streets/buildings
- \_\_\_ 3.3.4 Major drainage ways (at least named watercourses)
- 3.3.5 Identification of any public drinking water supply watershed area
  
- 3.3 Topography, Natural Features and Regulatory Boundaries
  - \_\_\_ 3.3.1 Existing contours (2 foot intervals)
  - \_\_\_ 3.3.2 Planned grades and elevations
  - \_\_\_ 3.3.4 Limits of cuts and/or fills
  - \_\_\_ 3.3.5 Soils, bedrock
  - \_\_\_ 3.3.6 Seeps, springs
  - \_\_\_ 3.3.7 Inland wetlands boundaries
  - \_\_\_ 3.3.8 FEMA identified floodplains, floodways and State established stream channel encroachment lines
  - \_\_\_ 3.3.9 Streams, lakes, ponds, drainage ways, dams
  - \_\_\_ 3.3.10 Existing vegetation
  - \_\_\_ 3.3.11 Tidal wetland boundaries and coastal resource limits (e.g. mean high water, shellfish beds, submerged aquatic vegetation)
  - 3.3.12 Public water supply watershed, well heads or aquifer boundaries (when available)
  
- 3.4 Drainage Patterns
  - 3.4.1 Existing and planned drainage patterns (including off-site areas)
    - \_\_\_ 3.4.2 Size of drainage areas
  - 3.4.3 Size and location of culverts and storm sewers (existing and planned)
  - 3.4.4 Size and location of existing and planned channels or waterways
  - \_\_\_ 3.4.5 Major land uses of surrounding areas
  
- 3.5 Road and Utility Systems
  - 3.5.1 Planned and existing roads and buildings with their location and elevations
    - \_\_\_ 3.5.2 Access roads: temporary and permanent
    - \_\_\_ 3.5.3 Location of existing and planned septic systems
  - 3.5.4 Location and size of existing and planned sanitary sewers
    - \_\_\_ 3.5.5 Location of other existing and planned utilities, telephone, electric, gas, drinking water wells, etc.
  
- 3.6 Clearing, Grading, Vegetation Stabilization
  - \_\_\_ 3.6.1 Areas to be cleared, and sequence of clearing
  - 3.6.2 Disposal of cleared material (off-site and on-site)
  - 3.6.3 Areas to be excavated or graded, and sequence of grading or excavation
  - 3.6.4 Areas and acreage to be stabilized with vegetation (Temporary and/or permanent)
    - \_\_\_ 3.6.5 Planned vegetation with details of plants, seed, mulch, fertilizer, planting dates, etc.

#### **4. Erosion & Sediment Control Drawings**

- \_\_\_ 4.1 Location of E&S measure on site plan drawing with appropriate symbols
- \_\_\_ 4.2 Construction drawings and specifications for measures
- \_\_\_ 4.3 Maintenance requirements of measures during construction of project
- \_\_\_ 4.4 Person [name and 24-hour telephone number] responsible for maintenance during construction of project and statement that such information shall be update within 24 hours of any change and designation.
- \_\_\_ 4.5 Maintenance requirements of permanent measures after project completion
- \_\_\_ 4.6 Handling of emergency situations (e.g. severe flooding, rains or other environmental problems).
- \_\_\_ 4.7 If not provided in the narrative, the information listed in checklist paragraph 1.6 (see narrative heading)
- \_\_\_ c. The estimated costs of measures required to control soil erosion and sedimentation, as specified in the certified plan shall be submitted as part of the application. Measures to be taken to control erosion and sedimentation shall be

described and provided for in the construction agreement and the estimated cost of accomplishing such measures shall be covered in a Bond or other assurances acceptable to the Commission.

\_\_\_\_ **d.** Site development shall not begin unless the soil erosion and sediment control plan is certified and those control measures and facilities in the plan scheduled for installation prior to site development are installed. Planned soil erosion and sediment control measures and facilities shall be installed as scheduled according to the certified plan. All control measures and facilities shall be maintained in effective condition to ensure the compliance of the certified plan.

\_\_\_\_ **e.** At the building permit application stage, a review will be conducted to insure conformance with the plan as approved for individual lots and site plans.

\_\_\_\_ **f.** The Planning and Zoning Commission, or its duly authorized representative shall make the necessary review and evaluation of methods used and the overall effectiveness of the erosion and sedimentation control program.

\_\_\_\_ **g.** To be eligible for certification, a soil erosion and sediment control plan shall contain proper provisions to adequately control accelerated erosion and sedimentation and reduce the danger from storm water runoff on the proposed site based on the best available technology. Such principles, methods and practices necessary for certification are found in the Connecticut Guidelines for Soil Erosion and Sediment Control 2002) as amended. The Commission may require additional information or measures where conditions so indicate the need. Alternative principles, methods and practices may be used with prior approval of the Commission.

\_\_\_\_ **h.** The Commission or its duly authorized agent shall review and approve the soil erosion and sediment control plan, as filed, if it complies with the requirements and objectives of this regulation; or approve with limitations or modifications; or deny the plan when the development proposal does not comply with these regulations or may cause hazards or damage to the public safety and welfare.

\_\_\_\_ **i** Nothing in these regulations shall be construed as extending the time limits for the approval of any application under Chapters 124, 124A or 126 of the General Statutes.

\_\_\_\_ **j** Prior to approval, any plan submitted to the Commission may be reviewed by the Connecticut River Coastal Conservation District which may make recommendations concerning such plan, provided such review shall be completed within thirty days of the receipt of such plan.

**For Use with New Land Development**

**Proposed Stormwater**

Section -A- Applicant & Site Information	
Applicant Name-	
Applicant Address-	
Phone-	Fax-
Email-	
Site Name-	
Site Address-	

**Management Practices:**

Site planning and design

Stormwater Treatment Practices (STPs)

**Provide location of the following information:**

on

*(Identify page or sheet # of any that apply)*

	Plans	Report
<b>Site Description</b>		
1. Natural and manmade features at the site		
2. Site topography, drainage patterns, flow paths, and ground cover		
3. Impervious area and runoff coefficient		
4. Site soils as defined by USDA		
5. Stormwater discharge from site and known sources of pollutants and sediment loading		
6. Critical areas, buffers, and setbacks established by authorities		
7. Water quality classification of on-site and adjacent water bodies		
8. Identity of any on-site or adjacent waterbodies included on <i>CT 303(d)</i> list of impaired waters		
<b>Potential Stormwater Impacts</b>		
1. Potential pollutant sources		
2. Type of anticipated stormwater pollutants and relative/calculated load of each pollutant		
3. Summary of calculated pre- and post-development peak flows		
4. Summary of calculated pre- and post-development groundwater recharge		

**Critical on-site resources** *(Check all that apply):*

- Wells, aquifers
- Wetlands, streams, ponds
- Public drinking water supplies
- Other:

**Critical off-site resources:**

- Neighboring land uses
- Wells, aquifers
- Wetlands, streams, ponds
- Public drinking water supplies
- Other:

## Part -1- Site Planning and Design

See Chapter 4 of *Stormwater Quality Manual* for complete descriptions of items in this section

### A- Site Planning and Design Concepts

- 1- Has the development been designed to fit the terrain?
- 2- Has the development been designed to limit land disturbance?
- 3- Have impervious areas been reduced or disconnected where possible?  
(Where Alternative Site Design techniques have been utilized, describe in Section B)
- 4- Has the development been designed to preserve and utilize natural drainage system?
- 5- Have setbacks and vegetated buffers been provided?
- 6- Has the creation of steep slopes been minimized?
- 7- Has pre-development vegetation been maintained?
- 8- Briefly describe post-construction landscaping practices used including attention to native/non-invasive planting?

### B- Alternative Site Design

Check all aspects included in the development design.

- |                                                                                |                                                                                 |
|--------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| <input type="checkbox"/> Reduced street widths                                 | <input type="checkbox"/> Reduced street lengths                                 |
| <input type="checkbox"/> Alternative cul-de-sac design                         | <input type="checkbox"/> Reduced use of storm sewers                            |
| <input type="checkbox"/> Reduced parking lot size                              | <input type="checkbox"/> Using permeable paving material                        |
| <input type="checkbox"/> Removal of curbing and addition of slotted curb stops | <input type="checkbox"/> Incorporation of bioretention into parking lot islands |
| <input type="checkbox"/> Alternative lot development                           | <input type="checkbox"/> Incorporation of rain gardens on house lots            |

For all aspects checked, provide detailed explanation:

## Part 2- Stormwater Treatment Practices

Complete Parts B-G for all developments

Complete and include appropriate sheets from Part 3.

### A- Practices Used

Check all practices used in development

- |                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b><u>Primary Treatment Practices</u></b>                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <input type="checkbox"/> <b>Stormwater Pond (P1)</b><br><input type="checkbox"/> micropool extended detention pond<br><input type="checkbox"/> wet pond<br><input type="checkbox"/> wet extended detention pond<br><input type="checkbox"/> multiple pond system<br><input type="checkbox"/> pocket pond | <input type="checkbox"/> <b>Stormwater Wetlands (P2)</b><br><input type="checkbox"/> shallow wetland<br><input type="checkbox"/> extended detention wetland<br><input type="checkbox"/> pond/wetland system<br><input type="checkbox"/> <b>Infiltration Practices (P3)</b><br><input type="checkbox"/> infiltration Trench<br><input type="checkbox"/> infiltration Basin | <input type="checkbox"/> <b>Filtering Practices (P4)</b><br><input type="checkbox"/> surface sand filter<br><input type="checkbox"/> underground sand filter<br><input type="checkbox"/> perimeter sand filter<br><input type="checkbox"/> organic filter<br><input type="checkbox"/> bioretention<br><input type="checkbox"/> <b>Water Quality Swales (P5)</b><br><input type="checkbox"/> dry swales<br><input type="checkbox"/> wet swales |

### **Secondary Treatment Practices**

#### Conventional

- |                                                                |                                                       |
|----------------------------------------------------------------|-------------------------------------------------------|
| <input type="checkbox"/> Dry detention pond (S1)               | <input type="checkbox"/> Dry wells (S5)               |
| <input type="checkbox"/> Underground detention facilities (S2) | <input type="checkbox"/> Permeable pavement (S6)      |
| <input type="checkbox"/> Deep sump catch basins (P3)           | <input type="checkbox"/> Vegetated filter strips (S7) |
| <input type="checkbox"/> Oil/particle separators (P4)          | <input type="checkbox"/> Grass drainage channels (S8) |

#### Innovative/ Emerging Technologies

- Catch basin inserts (S9)
- Hydrodynamic separators (S10)
- Media filters (S11)
- Underground infiltration systems (S12)
- Alum injections (S13)

If there no primary treatment practice used, explain why?

### B- Stormwater Quality Management Objectives

*Check all that apply*

- Groundwater Recharge
- Runoff Volume Reduction
- Stream Channel Protection
- Peak Flow Control

Pollutants expected from development:

- Sediment
- Phosphorus
- Nitrogen
- Metals
- Hydro-Carbons
- Bacteria

### C- Downstream Resources

*See Section 8.4 for guidance*

Practice	Sensitive Watercourses	Water Supply Aquifers	Lakes and Ponds	Surface Water Drinking Supplies	Estuary/ Coastal

### D- Has the STP been designed to minimize the potential for Nuisance Insects and Vectors?

*See Section 8.7 for guidance*

### E- Has the STP been designed to reduce the impact on natural wetlands and vernal pools?

*See Section 8.8 for guidance*

## Part 3 - Stormwater Treatment Practice (STP) Design Worksheets

### A. Stormwater Ponds (P1) (Chapter 11-P1)

Type:

- Wet Pond     
  Micropool Extended Detention Pond     
  Wet Extended Detention Pond     
  Multiple Pond System

Parameter	Design Criteria	Provide page or sheet number showing aspect or calculation
<b>Setback</b>	<i>50 feet from on-site sewage disposal systems</i>	
	<i>50 feet from private wells</i>	
	<i>10 feet from any property line</i>	
	<i>20 feet from any structure</i>	
	<i>50 feet from any steep slope</i>	
	<i>750 feet from any vernal pool</i>	
<b>Preferred Shape</b>	<i>Curvilinear</i>	
<b>Side Slopes</b>	<i>3:1 or maximum</i>	
	<i>Terminate at safety benches</i>	
<b>Length to Width Ratio</b>	<i>3:1 minimum along the flow path between the inlet and outlet at mid-depth</i>	
<b>Pretreatment Volume</b>	<i>10% of WQV</i>	
	<i>100% of WQV for higher pollutant loading (see Chapter 7)</i>	
<b>Pond Volume</b>	<i>Equal or exceeding WQV</i>	
<b>Drainage Area</b>	Wet ponds <i>Minimum contributing drainage area 25 acres</i>	
	Extended Detention <i>Minimum contributing drainage area 10 acres</i>	
	Pocket Ponds <i>Minimum contributing drainage area 1-5 acres</i>	
<b>Underlying Soils</b>	<i>Low permeability unless groundwater intercepted</i>	
<b>Capacity</b>	<i>Minimum ratio of pool volume to WQV between 2:1 and 4:1</i>	
<b>Depth</b>	Pool <i>3-6 feet, not greater than 8 feet</i>	
	Aquatic bench <i>12-18 inches</i>	
<b>Low Flow Orifice</b>	<i>Protected from clogging</i>	
<b>Pond Drain</b>	<i>Present</i>	
<b>Principle Spillway</b>	<i>Inaccessible to children</i>	
<b>Warning Signs</b>	<i>Posted against swimming/skating</i>	
<b>Maintenance Access</b>	<i>Extending to public road</i>	
<b>Cross Sections</b>		
<b>Describe Cold Climate Design Features:</b>		
<b>Other Design Features:</b>		

Part 3 - Stormwater Treatment Practice (STP) Design Worksheets

**B. Stormwater Wetlands (P2)** (Chapter 11-P2)

Type:

Shallow Wetland

Extended Detention Wetland

Pond/Wetland System

<u>Parameter</u>	<u>Criteria</u>	<u>page or sheet number showing aspect or calculation</u>
<b><u>Setback</u></b>	50 feet from on-site sewage disposal systems 50 feet from private wells 10 feet from any property line 20 feet from any structure 50 feet from any steep slope 750 feet from any vernal pool	
<b><u>Preferred Shape</u></b>	Curvilinear	
<b><u>Side Slopes</u></b>	3:1 or maximum Terminate at safety benches	
<b><u>Length to Width Ratio</u></b>	3:1 minimum along the flow path between the inlet and outlet at mid-depth	
<b><u>Pretreatment Volume</u></b>	10% of WQV 100% of WQV for higher pollutant loading (see Chapter 7)	
<b><u>Drainage Area</u></b>	Minimum contributing drainage area 25 acres Surface area of wetland 1 to 1.5% of contributing drainage area	
<b><u>Underlying Soils</u></b>	permeability unless groundwater intercepted Based on calculations on page 11-P2-7 and 8. Approximate guidelines: ratio of wetland to drainage area 0.2 for shallow marshes and 0.1 for extended detention shallow wetland systems	
<b><u>Size</u></b>		
<b><u>Depth</u></b>		
Marsh/Wetland	0.5 to 1.5 feet	
Forebays/Micropools	4-6 feet	
<b><u>Low Flow Orifice</u></b>	Protected from clogging	
<b><u>Wetland Drain</u></b>	Present	
<b><u>Principle Spillway</u></b>	Inaccessible to children	
<b><u>Warning Signs</u></b>	Posted against swimming/skating	
<b><u>Maintenance Access</u></b>	Extending to public road	
<b><u>Cross Sections</u></b>		
<b>Describe Cold Climate Design Features:</b>		
<b>Other Design Features:</b>		

Part 3 - Stormwater Treatment Practice (STP) Design Worksheets

**C. Infiltration Practices (P3)** (Chapter 11-P3)

Type:

Trench

Basin

Parameter	Design Criteria	Provide page or sheet number showing aspect or calculation
<b>Design Volume</b>	<i>Entire water quality volume (WQV)</i>	
<b>Pretreatment Volume</b>	<i>25% of WQV</i>	
<b>Maximum Draining Time</b>	<i>48 to 72 hours after storm event (entire WQV)</i>	
<b>Minimum Draining Time</b>	<i>12 hours (for adequate pollutant removal)</i>	
<b>Maximum Contributing Drainage</b>	Trench <i>5 acres</i>	
	Basin <i>25 acres</i>	
<b>Minimum Infiltration Rate</b>	<i>0.3 in/hr (as measured in field)</i>	
<b>Maximum Infiltration Rate</b>	<i>5.0 in/hr (as measured in field)</i>	
<b>Depth</b>	Trench <i>2 to 10 feet (trench depth)</i>	
	Basin <i>3 feet (pondering depth) recommended</i>	
<b>Vegetated Buffers</b>	<i>Around Trench</i>	
<b>Cross Sections</b>		
<b>Describe Cold Climate Design Features:</b>		
<b>Other Design Features:</b>		

Part 3 - Stormwater Treatment Practice (STP) Design Worksheets

**D. Filtering Practices (P4) (Chapter 11-P4)**

Type:

Surface Filters

Underground Filters

<b><u>Parameter</u></b>	<b>Design Criteria</b>	<b>Provide page or sheet number showing aspect or calculation</b>
<b><u>Maximum Drainage Area</u></b>	<i>5 to 10 acres</i>	
Bio-retention	<i>Less than 5 acres</i>	
<b>Slope</b>	<i>6% or less</i>	
<b>Head Difference</b>	<i>5 to 7 feet</i>	
<b>Underlying Soils</b>	<i>Highly impervious</i>	
<b>Distance to Water Table</b>	<i>At least 3 feet separation</i>	
<b>Pretreatment Volume</b>	<i>at least 25% WQV</i>	
<b>Length to Width Ratio</b>	<i>1.5:1 to 3:1</i>	
<b>Design Volume</b>	<i>At least 75% WQV</i>	
<b>Draining Time</b>	<i>Designed to Drain within 24 hours</i>	
<b>Cross Sections</b>		
<b>Describe Cold Climate Design Features:</b>		
<b>Other Design Criteria:</b>		

Part 3 - Stormwater Treatment Practice (STP) Design Worksheets  
**E. Water Quality Swales (P5)** (Chapter 11-P5)

Type:

Dry Swale

Wet Swale

Parameter	Design Criteria	Provide page or sheet number showing aspect or calculation
<b>Pretreatment Volume</b>	25% of the water quality volume (WQV)	
<b>Preferred Shape</b>	Trapezoidal and parabolic	
<b>Bottom Width</b>	4 feet minimum recommended for maintenance, 8 feet maximum, widths up to 16 feet are allowable if a dividing berm or structure is used	
<b>Side Slopes</b>	3(h): 1(v) maximum, 4:1 or flatter recommended for maintenance (where space permits)	
<b>Longitudinal Slope</b>	1% to 2% without check dams, up to 5% with check dams	
<b>Drainage Area</b>	No more than 5 acres	
<b>Sizing Criteria</b>	Length, width, depth and slope needed to provide surface storage for the WQV.	
	<u>Dry Swale</u> Maximum ponding time of 24 hours	
	Wet Swale retains the WQV for 24 hours; ponding may continue longer (5 days recommended maximum duration to avoid potential for mosquito breeding)	
<b>Underlying Soil Bed</b>	Equal to Swale width	
	<u>Dry Swale</u> Moderately permeable soils ( USCS ML, SM, or SC), 30 inches deep with gravel/pipe underdrain system	
	Wet Swale Undisturbed soils, no underdrain system	
<b>Depth and Capacity</b>	Surface storage of WQV with maximum ponding depth of 18 inches for water quality treatment	
	Safely convey 2-year storm with non-erosive velocity	
	Adequate capacity for 10-year storm with 6 inches of freeboard	
<b>Cross Sections</b>		
<b>Describe Cold Climate Design Features:</b>		
<b>Other Design Features:</b>		

Part 3 - Stormwater Treatment Practice (STP) Design Worksheets

**F. Secondary Treatment Practices (S1-S13)**

Provide location of explanatory narrative, computations and plan/detail for each numbered item consistent with “Design Consideration” for each measure.

<b>S1 Dry Detention Ponds</b>	
Explain why this practice is suitable for this site (see pp 11-S1-1 to 2):	
Item:	Location of Information:
1. Sediment Forebay with Deep Permanent Pool	
2. Extended Detention Storage Design (no longer than 5 days)	
3. Outlet Wet Pool	
4. Pond Configuration	
5. Low Flow Channels	
6. Dam Safety Section of CTDEP IWRD consulted regarding State jurisdiction?	
<b>S2 Underground Detention Facilities</b>	
Explain why this practice is suitable for this site (see pp 11-S2-1 to 3):	
Item:	Location of Information:
1. Siting	
2. Pretreatment	
3. Inlets, Outlets, and Overflows	
<b>S3 Deep Sump Catch Basins</b>	
Explain why this practice is suitable for this site (see pp 11-S3-1 to 3):	
Item:	Location of Information:
1. Drainage Area	
2. Design	
3. Maintenance	
4. Sediment Disposal	
<b>S4 Oil/Particle Separators</b>	
Explain why this practice is suitable for this site (see pp 11-S4-1 to 6):	
Item:	Location of Information:
1. Drainage Area	
2. Sizing/Design	
3. Maintenance	
<b>S5 Dry Wells</b>	
Explain why this practice is suitable for this site (see pp 11-S5-1 to 4):	

Item:	Location of Information:
1. Soils	
2. Land Use	
3. Drainage Area	
4. Water Table/ Bedrock	
5. Size/Depth	
6. Miscellaneous	
7. Construction	
8. Operation and Maintenance	
<b>S6 Permeable Pavement</b>	
Explain why this practice is suitable for this site (see pp 11-S6-1 to 4):	
Item:	Location of Information:
1. Soils	
2. Land Use	
3. Slope	
4. Water Table/ Bedrock	
5. Construction (Site Preparation and Planting)	
6. Operation and Maintenance	
<b>S7 Vegetated Filter Strips and Level Spreaders</b>	
Explain why this practice is suitable for this site (see pp 11-S7-1 to 6):	
Item:	Location of Information:
1. Slope	
2. Soils	
3. Drainage Area	
4. Water Table/ Bedrock	
5. Size	
6. Vegetation	
7. Level Spreader	
8. Construction	
9. Operation and Maintenance	
<b>S8 Grass Drainage Channels</b>	
Explain why this practice is suitable for this site (see pp 11-S8-1 to 3):	
Item:	Location of Information:
1. Provides sufficient channel length	
2. Provides non-erosive velocities	
3. Sufficient capacity and conveyance for 10-year frequency storm event.	

<b>S9</b>	<b>Catch Basin Inserts</b>
Explain why this practice is suitable for this site (see pp 11-S9-1 to 3):	
Item:	Location of Information:
1. High Flow Bypass	
2. Maintenance	
<b>S10</b>	<b>Hydrodynamic Separators</b>
Explain why this practice is suitable for this site (see pp 11-S10-1 to 3):	
Item:	Location of Information:
1. Drainage Area	
2. Sizing/Design	
3. Performance	
4. Maintenance	
5. Sediment Disposal	
<b>S11</b>	<b>Media Filter</b>
Explain why this practice is suitable for this site (see pp 11-S11-1 to 3):	
Item:	Location of Information:
1. Sizing/ Design	
2. Maintenance	
3. Sediment Disposal	
<b>S12</b>	<b>Underground Infiltration Systems</b>
Explain why this practice is suitable for this site (see pp 11-S12-1 to 3):	
Item:	Location of Information:
1. Siting	
2. Pretreatment	
3. Design Volume	
4. Draining Time	
5. Infiltration Rate	
<b>S13</b>	<b>Alum Injection</b>
Explain why this practice is suitable for this site (see pp 11-S13-1 to 2):	
Item:	Location of Information:
1. Design	
2. Operation and Maintenance	

## Calculations Worksheet

*Use separate sheet for each STP*

1. Water Quality Volume:  
Compute water quality volume.

**WQV= (ac-ft)**

2. Water Quality Flow:  
Compute the water quality flow.

**WQF= (cfs)**

3. Groundwater Recharge Volume:  
Compute the groundwater recharge volume.

**GRV= (ac-ft)**

4. Runoff Capture Volume:  
Compute the runoff capture volume.

**RCV= (ac-ft)**

5. Peak Discharge Rates:

Storm Event 24 hr storm	Pre-Development (cfs)	Post-Development (cfs)	Change (+/- cfs)
2-year			
10-year			
25-year			
100-year			
500-year			

## Appendix D

### Stormwater Treatment Facility Maintenance Declaration for Individuals Lots

WHEREAS, [Subdivider], hereinafter, "the Declarant," has obtain approval of the [Subdivision], hereinafter, "the Subdivision," as shown on plans entitled, "[Subdivision Plan title]", hereinafter "the Subdivision Plans;" and

WHEREAS, the Town of East Haddam, acting by and through its Planning and Zoning Commission and in consultation with the Connecticut Department of Environmental Protection, has determined that the protection of both surface and subsurface water quality in the Town requires that stormwater runoff from roofs, driveways, and other impervious surfaces be treated before being discharged into streams, lakes, and wetlands; and

*Whereas, the treatment of stormwater is achieved by a variety of methods prescribed by the 2004 Connecticut Stormwater Quality Manual (as amended) published by the Connecticut Department of Environmental Protection.*

WHEREAS, the Subdivision Plans depict one or many of these stormwater treatment methods, depending on the soil and groundwater conditions encountered on each lot; and

WHEREAS, each of these stormwater treatment systems require regular maintenance in order to operate as designed; and

WHEREAS, failure of these stormwater treatment systems could result in damage to the lots in the Subdivision, to downstream owners, and/or to waters that are used for domestic wells, recreation, and wildlife habitat;

NOW THEREFORE, the Declarant creates the following obligations for the protection and maintenance of the stormwater treatment systems on the lots in the Subdivision, which obligations shall run with the land and be binding on the heirs, successors, and assigns of the Declarant. This Declaration shall be noticed in each subsequent deed for this property.]

1. Protection and Maintenance of Stormwater Management Systems. No owner of a lot in the Subdivision shall remove any stormwater treatment system, or sever, re-route, or otherwise alter any drainage line leading to such system, nor take any other action which prevents water from reaching such system and flowing through it as designed. No less than every five (5) years or upon the change of ownership if less than five years, the lot owner shall remove accumulated sediment, leaves, litter, or other material which may have accumulated within stormwater treatment systems.

2. Access by Town in the Event of Default. In the event that any lot owner fails to maintain any stormwater treatment system, or alters it so that it cannot operate as designed, the Town of East Haddam shall have the authority, but no the obligation, to enter onto such lot and perform such repairs or maintenance to the stormwater treatment system as may be required to restore it to proper operation. For this purpose, the Town shall have the right to enter onto any lot with equipment and personnel sufficient to perform the work required, and to remove any landscaping, accessory structures, fences, walls, or other obstacles which might prevent such access. It is the duty of the owner to insure that a viable access to the stormwater treatment system exists on the lot for normal maintenance and repair, and, in the event that the Town performs such work due to the lot owners failure to do so, the Town shall have no obligation to restore any disturbed areas, other than to rough grade and seed such areas. Before exercising any access, maintenance, or repair rights under this paragraph, the Town shall provide written notice at least thirty (30) days before such access, such notice to be by certified mail, return receipt requested, and setting forth the work required to be done. If the lot owner performs the specified work at its own cost and expense, and notifies the Town of its completion, the Town shall not enter onto the lot unless such work has not been performed fully or correctly.

3. Lien to Secure Town Work in Event of Default. In the event that the Town of East Haddam performs maintenance, repairs, or other corrective action due to any action of the lot owner, or the failure of the lot owner to perform the maintenance work described in this Declaration, the lot owner shall reimburse the Town of East Haddam for the cost of performing said work. The Town shall notify the lot owner by certified mail, return receipt requested, and setting forth the work performed and the cost thereof. The lot owner shall pay said sum to the Town within thirty (30) days of receipt. The Town may secure the payment of such reimbursement by a filing a lien in against the lot, indexed in the name of the record owner thereof.

4. Payment of Attorney's Fees. Any party to this Declaration may enforce the provisions hereof against any other party in an action for compensatory damages, injunction, or such other remedy as the conditions may indicate. In the event that any party to this Declaration seeks to enforce its provisions, the non-prevailing party shall be liable to the prevailing party for the prevailing party's reasonable costs, including, but not limited to, attorney's fees, witness fees, court entry fees, marshal's fees, and transcription costs.

Dated at East Haddam, Connecticut, this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

Declarant, [name of property owner]

By \_\_\_\_\_

It's \_\_\_\_\_, Duly Authorized

[witness line and acknowledgement].

**APPENDIX E – SOILS CLASSIFICATIONS**  
**Soils Characteristics – National Cooperative Soil Survey**  
**Favorable Soils, Questionable Soils, Unfavorable Soils**

**FAVORABLE SOILS**

**Class A Soils – Slight limitations / High Potential**

ChB – Canton and Charlton fine sandy loams, 3 to 8 percent slope – soil depth of 60 inches or more – well drained soils – good potential for community development.

CsB – Cheshire silt loam, 3 to 8 percent slopes – soil depths of 60 inches or more – well drained soils – good potential for community development.

CcB – Canton and Charlton very fine sandy loams – 3 to 8 percent slopes – soil depths of 60 inches or more – well drained soils – good potential for community development.

CcC – Canton and Charlton very stony fine sandy loams, 8 to 15 percent slopes – soil depth of 60 inches or more – well drained soils – good potential for community development.

CsC – Cheshire silt loams, 8 to 15 percent slopes, soil depth of 60 inches or more – moderately drained soils – fair potential for community development.

CrC – Charlton-Hollis very stony fine sandy loam, 3 to 15 percent slopes – soil depth of 60 inches or more with rock out crops – moderate to well drained soils – good potential for community development due to bedrock.

CyC – Cheshire-Holyoke very stony silt loams, 3 to 15 percent slopes – soil depth of 60 inches or more with bedrock out crops – moderate to well drained soils – fair potential for community development due to bedrock.

CdC – Canton and Charlton extremely stony fine sandy loams, 3 to 15 percent slopes - soil depth of 60 inches or more – well drained soils – fair potential for community development due mainly to stoniness and slope.

PbB – Paxton and Montauk fine sandy loams, 3 to 8 percent slopes - soil depths of 60 inches or more - well drained soils – fair potential for community development – slow permeability.

PbC – Paxton and Montauk fine sandy loams, 8 to 15 percent slopes - soil depth to 60 inches or more - well drained soils – fair potential for community development – slow permeability.

PdB – Paxton and Montauk very stony fine sandy loams, 3 to 8 percent slopes - soil depth of 60 inches or more - well drained soils – fair potential for community development – slow permeability

PdC – Paxton and Montauk very stony fine sandy loams, 8 to 15 percent slopes, soil depth of 60 inches or more, well drained soils – fair potential for community development – slow permeability.

PeC – Paxton and Montauk extremely stony fine sandy loams, 3 to 15 percent slopes - soil depth of 60 inches or more - well drained soils – fair potential for community development – slow permeability.

WkB – Wethersfield loams, 3 to 8 percent slopes - soil depth to 60 inches or more - fair potential for community development – slow permeability.

WkC – Wethersfield loam, 8 to 15 percent slopes - soil depth of 60 inches or more - well drained soils - fair potential for community development – steep slopes and slow permeability.

WmB – Wethersfield very stony loam, 3 to 8 percent slopes - soil depth of 60 inches or more - fair potential for community development – slow permeability.

WmC – Wethersfield very stony loam, 8 to 15 percent slopes - soil depth of 60 inches or more - fair potential for community development – slow permeability.

**Group 1 – Slight limitations/low potential.**

**Because of rapid permeability, groundwater may become polluted.**

AfA – Agawam fine sandy loam, 0 to 3 percent slopes - depth to 60 inches or more – outwash plains and stream terraces, good potential for community development.

AfB – Agawam fine sandy loams, 3 to 8 percent slopes - depth to 60 inches or more – outwash plains and stream terraces, good potential for community development.

BoA – Branford silt loam, 0 to 3 percent slopes - depth to 60 inches or more – outwash plains and stream terraces, good potential for community development.

BoB – Branford silt loam, 3 to 8 percent slopes - depth to 60 inches or more – outwash plains and stream terraces, good potential for community development.

HfA – Hartford sandy loam, 0 to 3 percent slopes - depth to 60 inches or more – outwash plains and stream terraces, good potential for community development.

HfA – Hartford sandy loam, 3 to 8 percent slopes - depth to 60 inches or more – outwash plains and stream terraces, good potential for community development.

MgA – Manchester gravelly sandy loam, 0 to 3 percent slopes - depth to 60 inches or more – outwash plains and stream terraces, good potential for community development.

MyA – Merrimac sandy loam, 0 to 3 percent slopes - depth to 60 inches or more – outwash plains and stream terraces, good potential for community development.

MyB – Merrimac sandy loam, 3 to 10 percent slopes - depth to 60 inches or more – outwash plains and stream terraces, good potential for community development.

PnA – Penwood loamy sand, 0 to 3 percent slopes - depth to 60 inches or more – outwash plains and stream terraces, good potential for community development.

PnB – Penwood loamy sand, 3 to 8 percent slopes - depth to 60 inches or more – outwash plains and stream terraces, good potential for community development.

WvA – Windsor sandy loam, 0 to 3 percent slopes - depth to 60 inches or more – outwash plains and stream terraces, good potential for community development.

WvB – Windsor sandy loam, 3 to 8 percent slopes - depth to 60 inches or more – outwash plains and stream terraces, good potential for community development.

BoC – Branford silt loam, 8 to 15 percent slopes - depth to 60 inches or more – outwash plains and stream terraces, fair potential for community development due to slope.

HkC – Hinckley gravelly sandy loam, 3 to 15 percent slopes - depth to 60 inches or more – stream terraces, kames, and eskers, good potential for community development.

MgC – Manchester gravelly sandy loam, 3 to 15 percent slopes - depth to 60 inches or more – stream terraces, kames, and eskers, good potential for community development.

### **Class B Soils – Severe limitations / Medium Potential / Slopes**

CdD – Canton and Charlton extremely stony fine sandy loam, 15 to 35 percent slope - soil depth of 60 inches or more – well drained soils – poor potential for community development due to slope and stoniness.

PeD – Paxton and Montauk extremely stony fine sandy loams, 15 to 35 percent slopes - soil depth of 60 inches or more, well drained soils – poor potential for community development – steep slopes, stoniness, and slow permeability.

WkD – Wethersfield loam, 15 to 35 percent slope - soil depth of 60 inches or more, well drained soils, poor potential for community development – steep slopes and slow permeability.

### **QUESTIONABLE SOILS**

#### **Class C Soils**

##### **Seasonal High Water Table 18 to 20 inches**

LpA – Ludlow silt loam, 0 to 3 percent slopes - soil depth of 60 inches or more – soil has a high water table at a depth of 20 inches from late autumn until mid-spring – fair potential for community development – slow permeability and seasonal high water table.

LpB – Ludlow silt loam, 3 to 8 percent slope - soil depth of 60 inches or more – soil has a high water table at a depth of 20 inches from late autumn until mid-spring – fair potential for community development – slow permeability and seasonal high water table.

LuB – Ludlow very stony silt loam, 3 to 8 percent slopes - soil depth of 60 inches or more, - soil has a high water table at a depth of 20 inches from late autumn until mid-spring – fair potential for community development – slow permeability and seasonal high water table.

WxA – Woodbridge fine sandy loam, 0 to 3 percent slopes - soil depth of 60 inches or more but soil has a seasonal high water table at a depth of about 18 inches from autumn until mid-spring. Fair potential for community development – limited by wetness and slow permeability.

WxB – Woodbridge fine sandy loam, 0 to 3 percent slopes - soil depth of 60 inches or more but soil has a seasonal high water table at a depth of about 18 inches from autumn until mid-spring. Fair potential for community development – limited by wetness and slow permeability.

WyB – Woodbridge very stony fine sandy loam, 3 to 8 percent slopes - soil depth of 60 inches or more but soil has a seasonal high water table at a depth of about 18 inches from autumn until mid-spring. Fair potential for community development – limited by wetness and slow permeability.

BcA – Berlin silt loam, 0 to 5 percent slope, glacial lacustrine terraces - soil depth of 60 inches or more, soil has a seasonal high water table at a depth of 20 inches, fair potential for community development – slow permeability and high water table.

EfA – Ellington fine sandy loam, 0 to 3 percent slopes, broad outwash terraces - depth to 60 inches or more, seasonal high water table at a depth of about 20 inches from late fall through early spring. Fair potential for community development – high water table

LvC – Ludlow extremely stony loam, 3 to 15 percent slopes, concave slopes of drumlins and slight depression in glaciated uplands, soil depth of 60 inches or more, soil has a seasonal high water table at 20 inches from autumn until mid-spring, fair potential for community development – seasonal high water table and slow permeability

NnA – Ninigret fine sandy loam, 0 to 5 percent slopes, outwash plains and stream terraces, soil depth of 60 inches or more, seasonal high water table at a depth of 20 inches from late autumn until spring fair potential for community development – seasonal high water table

SgA – Sudbury sandy loam, 0 to 5 percent slopes, broad outwash terraces and narrow stream valleys, soil depth of 60 inches or more, seasonal high water table at a depth of 20 inches from late autumn until midspring, fair potential for community development – seasonal high water table

WzA – Woodbridge extremely stony fine sandy loam, 0 to 3 percent, soil depth of 60 inches or more, seasonal high water table at a depth of 18 inches, fair potential for community development – seasonal high water table and slow permeability

WzC – Woodbridge extremely stony fine sandy loam, 3 to 15 percent slopes, soil depth of 60 inches or more, seasonal high water table at a depth of 18 inches, fair potential for community development – seasonal high water table and slow permeability

### **Bedrock – 20 to 40 inches**

YaB – Yalesville fine sandy loam, 3 to 8 percent slopes, glacial till over bedrock – 20 to 40 inches, fair potential for community development – shallowness to bedrock

YaC – Yalesville fine sandy loam, 8 to 15 percent slopes, glacial till over bedrock – 20 to 40 inches, fair potential for community development – shallowness to bedrock

### **Slope 15 to 45% no areas exceeding 25%**

### **UNFAVORABLE SOILS**

HME – Hinckley and Manchester soils, kames and eskers of outwash terraces, 15 to 45 percent slopes, depth of 60 inches or more, poor potential for community development – steep slopes

### **Class D Soils – Disturbed soils, variable in nature, on-site investigation by licensed soil scientist**

UD – Udorthents - Urban land complex

Ur – Urban land – paved roads and parking lots

### **Class E Soils – Inland Wetlands Soils 0% Applied Area – Severe limitations / Low Potential**

Rb – Raypol silt loam, 0 to 3 percent slopes, poorly drained soils in depressional areas, soil depth of 60 inches or more, poor potential for community development – wetness is the major limitation

St – Suncook loamy sand – nearly level excessively drained soil on the flood plains, poor potential for community development – flooding

Wr – Wilbraham silt loam – nearly level to gently sloping poorly drained soil in drainageways and depressions of glacial till uplands, seasonal high water table at a depth of 8 inches, poor potential for community development – wetness is the major limitation

Aa – Adrian Muck – nearly level, poorly drained organic soil. Water is at the surface most of the year, poor potential for community development – wetness is the major limitation

Ce – Carlisle Muck – Nearly level, poorly drained, organic soil. High water table and ponding, poor potential for community development – wetness is the major limitation

Lg – Liecester, Ridgebury, and Whitman soils, nearly level, very poorly drained soils, poor potential for community development – wetness is the major limitation, stoniness, slow permeability

Ps – Podunk fine sandy loam, nearly level soils on flood plains along major streams, poor potential for community development – wetness and flood hazard

Ru – Rumney fine sandy loam – nearly level soils on flood plains along major streams, poor potential for community development – wetness and flood hazard

Rv – Rumney Variant silt loam – nearly level soils on flood plains along major streams, poor potential for community development – wetness and flood hazard

Sb – Saco silt loam – nearly level, very poorly drained soils on low flood plains adjacent to streams and rivers – poor potential for community development – wetness and flood hazard

Sc – Scarboro mucky loam fine sand – nearly level, very poorly drained soil in depressions of broad glacial outwash terraces – poor potential for community development – high water table

Wd – Walpole sandy loam – nearly level, poorly drained soil in depressions of glacial outwash plains – poor potential for community development – high water table

We – Westbrook mucky peat – nearly level very poorly drained soil in tidal marshes – subject to tidal flooding – poor potential for community development – high water table, flooding

Wh – Westbrook mucky peat, low salt – nearly level, very poorly drained soil in tidal marshes – poor potential for community development – high water table, flooding

Wt – Wilbraham extremely stony silt sand – poorly drained soil in drainageways and depressions, seasonal high water table at a depth of about 8 inches – poor potential for community development – high water table, stoniness, slow permeability

### **Class E Soils – Severe limitations / very low potential, 14 inches or less to bedrock rock outcrop 0% Applied Area**

HpE – Hollis-Charlton extremely stony fine sand, 15 to 40 percent slopes, moderately steep to very steep slopes, areas with bedrock outcrops, poor potential for community development – steep slopes, shallowness to bedrock, rock outcrops, and stoniness

HrC – Hollis Rock outcrop complex, 3 to 15 percent slopes, poor potential for community development – shallowness to bedrock, rock outcrops, and stoniness

HsE – Hollis – Rock outcrop complex, 15 to 40 percent slopes, moderately steep to steep and areas of rock outcrop

HuD – Holyoke-Cheshire very stony silt loams, 15 to 35 percent slopes, moderately steep to steep slopes with underlying bedrock – poor potential for community development – steep slopes, shallowness to bedrock, rock outcrops, and stoniness

HyC – Holyoke – Rock outcrop complex 3 to 15 percent slopes, areas of bare, exposed bedrock, poor potential for community development – shallowness to bedrock, rock outcrops, and stoniness

HxE – Holyoke-Rock outcrop complex, 15 to 40 percent slope, moderately steep to steep, exposed hard bedrock – poor potential for community development – steep slopes, shallowness to bedrock, rock outcrops, and stoniness

Rp – Rock outcrop – Hollis complex, areas of hard, exposed bedrock – poor potential for community development – steep slopes, shallowness to bedrock, rock outcrops, and stoniness