# SITE PLAN REVIEW REGULATIONS
# of
# DURHAM, NEW HAMPSHIRE

## *SECTION 1: Authority and Purpose*

### *1.01 Authority*

Pursuant to the authority vested in the Durham Planning Board, by the legislative body of the Town of Durham, in accordance with previously adopted subdivision regulations under RSA 674:36, the Durham Planning Board is empowered under RSA 674:43 to review and approve or disapprove site plans. This review authority shall be applied to the development of tracts for non-residential uses and for multi-family dwelling units which are defined as any structure containing more than two (2) dwelling units per structure, whether or not such development includes a subdivision or re-subdivision of a site.

### *1.02 Purpose*

The purpose of the Durham Site Plan Review Regulations, as authorized by RSA 674:44-II, is to:

A. Provide for the safe and attractive development of the site and guard against such conditions as would involve danger or injury to health, safety, or prosperity by reason of:

1) Inadequate drainage or conditions conducive to flooding of the property or that of another;
2) Inadequate protection for the quality of surface and groundwater;
3) Undesirable and preventable elements of pollution such as noise, smoke, soot, particulate or any other discharge into structures or adjacent properties;
4) Inadequate provisions for fire safety, prevention and control; and
5) Inadequate pedestrian and traffic plans.

B. Provide for the harmonious and aesthetically pleasing development of the municipality and its environs;

C. Provide for open spaces and green spaces of adequate proportions;

D. Require the proper arrangement and coordination of streets within the site in relation to other existing or planned streets or with features of the official map of the municipality;

E. Require suitably located streets to be of sufficient width to accommodate existing and prospective traffic and to afford adequate light, air and access for fire fighting apparatus and equipment to buildings and be coordinated so as to compose a convenient system;

F. Require in proper cases, that plats showing new streets or narrowing or widening of such streets be submitted to the Planning Board for approval;

G. Require that the land indicated on plats submitted to the Planning Board shall be of such character that it can be used for building purposes without danger to health;

H. Include such provisions as will tend to create conditions favorable for health, safety, convenience and prosperity; and

I. Prevent scattered and/or premature development.

***SECTION 2: Title***

These regulations shall be known and cited as the SITE PLAN REVIEW REGULATIONS OF DURHAM, NEW HAMPSHIRE, and supercede the Site Plan Regulations, Town of Durham, New Hampshire, Adopted December 12, 1990, as amended prior hereto, and such prior regulations are hereby rescinded.

***SECTION 3: Words and Phrases***

***3.01 Word Usage***

Words used in the present tense shall include the future; the singular includes the plural and the plural includes the singular; the word "building" shall include the word "structure", the word "shall" is mandatory; the word "may" is permissive. The word "person" includes an individual, partnership, firm, association, corporation, organization, or institution.

***3.02 Definitions*** ***(Amended July 14, 2010)***

Best Management Practices (BMP): Methods and means that have been determined to be the most effective, practical approaches of preventing or reducing pollution and detrimental impacts from stormwater runoff.

Buffer: A vegetated area or zone separating a development from a sensitive resource or neighboring property in which proposed development is restricted or prohibited.

Development: Any man-made change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation, or drilling operations.

Disconnected Impervious Cover: The sum of the proposed areas of impervious cover and pavement that receive runoff and, by means of implementing BMPs and LID strategies, is designed to capture and filtrate the precipitation from a 1-inch 24-hour rain event.

Disturbance: Any activity that significantly alters the characteristics of the terrain in such a manner as to impede or alter the hydrology or natural runoff pattern, or creates an unnatural runoff.

Effective Impervious Area (EIA): The total impervious surface areas less the area of disconnected impervious cover.

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 Surface: A material with low permeability that impedes the natural infiltration of moisture into the ground so that the majority of the precipitation that falls on the surface runs off or is not absorbed into the ground. Common impervious surfaces include, but are not limited to, roofs, concrete or bituminous paving such as sidewalks, patios, driveways, roads, parking spaces or lots, and storage areas, compacted gravel including drives and parking areas, oiled or compacted earthen materials, stone, concrete or composite pavers, wood, and swimming pools.

Low Impact Development (LID): Site planning and design strategies intended to maintain or replicate predevelopment hydrology through the use of source control and relatively small-scale measures integrated throughout the site to disconnect impervious surfaces and enhance filtration, treatment, and management of stormwater runoff as close to its source as possible. Examples of LID strategies are pervious pavement, rain gardens, green roofs, bioretention

basins and swales, filtration trenches, and other functionally similar BMPs located near the runoff source.

Maximum Extent Practicable (MEP): To show that a proposed development has met a standard to the maximum extent practicable, the applicant must demonstrate the following: (1) all reasonable efforts have been made to meet the standard, (2) a complete evaluation of all possible management measures has been performed, and (3) if full compliance cannot be achieved, the highest practicable level of management is being implemented.

Native plants: Plants that are indigenous to the region, adapted to the local soil and rainfall conditions, and require minimal supplemental watering, fertilizer, and pesticide application.

Pavement: Areas of a site that are covered with pervious and/or impervious asphalt and concrete.

Porous Media: Material with open connected pore spaces that allows water to percolate through it such as granular soils, gravel, crushed stone, pervious pavements, and woven and non-woven geosynthetics.

Redevelopment: Any man-made change to previously improved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation, and drilling operations.

Riparian: Referring to anything connected or immediately adjacent to the shoreline or bank of a stream, river, pond, lake, bay, estuary or other similar body of water.

Riparian buffer: The naturally vegetated shoreline, floodplain or upland forest adjacent to a surface water body. Riparian buffers provide stormwater control flood storage and habitat values. Wherever possible, riparian buffers should be sized to include the 100-year floodplain as well as steep banks and freshwater wetlands.

Runoff: Stormwater that does not infiltrate into the ground and flows toward a below-ground or surface discharge location.

Site: A lot, tract or parcel of land on which a development is located that includes but is not limited to the proposed area of disturbance and development activities.

Stormwater: Water that originates from precipitation events and accumulates on land.

Stormwater Management Plan: A written plan describing the proposed methods and measures to be implemented to prevent or minimize water quality and quantity impacts from stormwater associated with a development or redevelopment project both during and after construction. It identifies selected BMPs, LID source controls, and treatment practices to address those potential impacts, and contains the engineering design plans, specifications, and calculations of the management and treatment practices, and maintenance requirements for proper performance of the proposed practices.

Water Quality Treatment: the capture of sediment, nutrients, metals and hydrocarbons suspended in stormwater runoff from impervious surfaces before being conveyed to a storm sewer network or to another water quality treatment system. In most cases where no other local water body impairments exist, adequate treatment refers to documenting the treatment systems ability to remove 80% of the total suspended solids (TSS) on an annual basis. Where water quality impairments do exist adequate treatment refers to a system's ability to meet maximum load allocations or not further impair the receiving water.

Water Quality Volume (WQv): The storage volume needed to capture and treat the runoff from the 1-inch 24-hour rainstorm for a specific contributing area.WQv shall be calculated using the following equation:
WQv = (P)(Rv)(A), where: P = 0.083 ft, Rv = the unitless runoff coefficient, Rv = 0.05 + 0.9(I), where I = the percent impervious surface draining to the discharge point, in decimal form, and A = total site area in square feet draining to the discharge point

***SECTION 4: Interpretation***

These Site Plan Review Regulations in no way relieve the developer or his/her agent from compliance with the Zoning Ordinance, Subdivision Regulations or any other ordinance which pertains to the proposed development.

The standards contained in these regulations shall be interpreted as minimum requirements, and compliance with said minimum requirements shall in no instance obligate the Planning Board to approve any particular application solely on that basis. Only after the Planning Board is fully satisfied that a proposed application is in accordance with the Master Plan and Town Ordinances will the application be approved.

## *SECTION 5: Application Procedures*

### *5.01 Preapplication Review Phases (RSA 676:4II) An applicant may elect to forego or engage in preapplication review or either phase thereof.*

A. ***Preliminary Conceptual Consultation Phase***

1). The applicant may request a meeting with the Board to discuss a proposal in conceptual form and in general terms. Such preapplication consultation shall be informal and directed toward:

a. reviewing the basic concepts of the proposal,

b. reviewing the proposal with regard to the Master Plan and Zoning Ordinance,

c. explaining the local regulations that may apply to the proposal, and,

d. guiding the applicant relative to state and local requirements.

2). Preliminary conceptual consultation shall not bind the applicant or the Board. Such discussion may occur without formal public notice, but must occur only at a posted meeting of the Board.

B. ***Design Review Phase***

1). Prior to submission of a completed application for Planning Board action, an applicant may request to meet with the Board for non-binding discussions beyond the conceptual and general, involving more specific design and engineering details of the potential application.

2). The Design Review phase may proceed only after identification of and notice to abutters; holders of conservation, preservation, or agricultural restrictions; and the general public as required by RSA 676:4 I(d).
(Amended July 15, 1998)

3). Persons wishing to engage in preapplication Design Review shall submit a "Request for Preapplication Review" (Attachment 2) and associated fees not less than 20 days before the regularly scheduled meeting of the Board. The request shall include:

a. a list of abutters and their addresses from municipal records not more than five days before submission,

b. a list of all holders of conservation, preservation, or agricultural preservation restrictions on the subject property, and

c. a check or cash to cover mailing and advertising costs.

(Amended July 15, 1998)

4). All discussion in the Design Review Phase shall be informal and non-binding. Statements made by Board members shall not be the basis for disqualifying said members or invalidating any action eventually taken on the application.

5). The Board shall not accept any submissions by the applicant at this time.

### *5.02 Formal Application*

A. A formal application shall consist of the forms and data as shown in Section's 7, 9, and 10 of these regulations. It shall also include all fees required by the Town under the provisions of RSA 676:4, I(g).

B. Upon receipt of a formal application, the Director of Planning and Community Development will review it using the Site Plan Application Checklist. Within five (5) business days of submitting a formal application, the applicant shall meet with the Director of Planning and Community Development to discuss issues related to completeness and acceptance of the application. If this review discloses that all requirements specified on the Site Plan Application Checklist have not been met, the applicant will be notified in writing what specific items are still needed. When all requirements have been met, the application will be scheduled for submission to the Planning Board by placing it on the Board's agenda. (Amended May 8, 2002)

C. A formal application shall only be submitted to the Planning Board at a regular meeting after notification has been given as required by RSA 676:4,I(d). The Planning Board shall consider the application, and act to accept, reject or table it within 30 days of receipt of the completed application by the Board or its designee. Such action shall be by a majority vote of those Board members present. (Amended July 15, 1998)

D. Prior to the next regularly scheduled meeting of the Planning Board, the applicant, at the discretion of the Director of Planning and Community Development, shall meet with the appropriate Department Heads of the Town of Durham to discuss the implications the application will have on the various Departments of the town. (Amended May 8, 2002)

### *5.03 Action on a Formal Application*

A. Once a formal application is accepted, the Planning Board must act on it within 90 days after receipt of the completed application by the Board or its designee. The Board shall consider the application at its regular meetings, or at workshop meetings if required, and a site visit will be scheduled. Additional reports or studies may be required by the Board, including but not limited to, high intensity soil survey, traffic, school, fiscal, and environmental

impact analyses, to allow the Board to make an informed and educated decision concerning the application. (Amended July 15, 1998)

B. Prior to the approval of a site plan application, a public hearing shall be held as required by RSA 676:4 I(d) with notice given to the applicant; holders of conservation, preservation, or agricultural preservation restrictions; every engineer, architect, land surveyor, or soil scientist whose professional seal appears on the plan submitted to the Board; abutters, and the public.

(Amended July 15, 1998)

C. The Board may apply to the Town Council for an extension of the 90 day time period, not to exceed an additional 90 days, before acting to approve, conditionally approve, or disapprove an application. An applicant may waive the requirement for Board action within the time period specified in these regulations and consent to such an extension as may be mutually agreeable.

D. If the Board has not taken action on the formal application within 90 days after receipt of the completed application by the Board or its designee, and the Board has not obtained an extension, the applicant may obtain from the Town Council an order directing the Planning Board to act within 15 days. Failure of the Board to act on the order shall constitute grounds for the applicant to petition the Superior Court as provided in RSA 676:4,I(c).

(Amended July 15, 1998)

E. The Board shall act to approve, conditionally approve, or disapprove the formal application within 90 days of receipt of the completed application by the Board or its designee. (see Attachment 4a). A conditional approval will be stated in the form of "Findings of Fact and Conditions of Approval" (see definitions). (Amended July 15, 1998)

F. Approval of the application shall be certified by written endorsement on the plan and signed and dated by the Chair of the Board.

G. A financial surety, adequate to cover the construction of all infrastructure improvements approved as part of the site plan application, shall be posted with the Town prior to signing the plan. The following financial sureties are acceptable to the Town: cash, passbook savings account in the Town's name, letter of credit, or a bond.

H. If any application is disapproved, the grounds for such disapproval shall be adequately stated in the records of the Board and in written notice given to the applicant within 72 hours (see Attachment 4b). Applications may be disapproved by the Board without public hearing on the grounds of failure by the applicant to supply information or to pay fees as required by these regulations.

### *5.04 Notices*

A. Notice of a Design Review, submission of a formal application, or of a public hearing, shall be given by the Board to the abutters; holders of conservation, preservation, or agricultural preservation restrictions; every engineer, architect, land surveyor, or soil scientist whose professional seal appears on the plan submitted to the Board; and the applicant. The notice shall be provided by certified mail, and mailed at least ten (10) days prior to the meeting (see Attachment 3a). (Amended July 15, 1998)

B. The public shall be given notice at the same time, by posting in two public places and in a paper of general circulation in the Town.

C. The notice shall give the date, time, and place of the Planning Board meeting at which the application or other item(s) will be formally submitted to the Board, shall include a general description of the proposal which is to be considered, and shall identify the applicant and the location of the proposal (see Attachment 3b).

D. If the notice for the public hearing was included in the notice of submission or any prior notice, additional notice of the public hearing is not required. Additional notice is not required of an adjourned session of a public hearing provided that the date, time and place of the adjourned session was made known at the prior public hearing.

## *SECTION 6: Fees*

***6.01.*** A formal application for site plan approval shall be accompanied by an initial filing fee.

***6.02.*** Pursuant to RSA 676:4 I(g), it shall be the responsibility of the applicant, if the Board deems it necessary, to pay reasonable fees for special investigative studies, environmental assessments, legal review of documents, administrative expenses, and other matters which may be required to make an informed decision on a particular application.

***6.03.*** The application submittal fees are adopted by reference as part of these regulations.

*SECTION 7: Application Submission Requirements*

***7.01.***A Formal Application shall be filed with the Planning Board or its designated agent at least twenty-one (21) calendar days prior to a regularly scheduled meeting of the Board. (Amended May 8, 2002)

***7.02.*** Formal Application Content: A Formal Application shall be submitted using the form available from the Planning Office (Attachment 1), and shall be accompanied by:

A. a letter of intent detailing the proposal;

B. a list of the names and addresses of all the abutters, as shown in town records not more than five (5) days before the day of filing; and a listing of all holders of conservation, preservation, or agricultural preservation restrictions on the subject property; (Amended July 15, 1998)

C. additional documents, as requested by the Planning Office; and

D. five copies, 24"x 36" and ten additional copies , 8.5"x 11", ", 8.5" x 14", or 11" x 17", of the plan. However, the Planning Board or its designee may require the ten additional copies to be 24" x 36", as deemed necessary. The plan shall be prepared by a land surveyor, using a scale of 1 inch equals 100 feet or larger (i.e. 1 inch equals 50 feet, 1 inch equals 20 feet, etc) and shall include:
(Amended July 15, 1998)

1) A Title Block, including:
   a) Title of plan;
   b) Owner's name and address, and name of agent, if any
   c) The date the plan was prepared and date of subsequent revisions;
   d) Scale of the plan; and
   e) Name, address and seal of the preparer of the plan.

2) North arrow and bar scale.

3) A location plan at a minimum scale of one (l) inch equals one thousand (l,000) feet, showing:

   a) Property lines of the parcel being developed in relation to the surrounding area within a radius of two thousand (2,000) feet.
   b) Names and locations of existing town streets including the nearest intersection of said streets;
   c) Names and locations of streets within the proposed development;
   d) Names and location of watercourses and water bodies on and adjacent to the site;
   e) Area of entire parcel in acres and square feet.

4) The plan of the site itself shall show:

a) Surveyed property lines of the parcel showing their bearings;
b) Names of all abutting property owners;
c) Location and layout of existing and proposed structures and buildings;
d) Existing and proposed contours at two (2) foot intervals for the entire site. Where a change in grade is proposed, existing contours shall be dotted lines and finished elevations solid;
e) Area of entire parcel in acres and square feet;
f) Zoning and special district boundaries;
g) Deed reference and tax map number;
h) Location width, curbing and paving of access ways, egress ways and streets within the site;
i) Location and layout of all on-site parking and loading facilities;
j) Location and size of all municipal and non-municipal utilities and appurtenances including: water, sewer, electric, telephone, gas lines and fire alarm connections, indicating whether overhead or underground, and the location of wells and septic systems;
k) Type and location of solid waste disposal facilities;
l) Location, elevation and layout of catch basin and other surface drainage features;
m) Location of all physical/natural features including: water bodies, watercourses, wetlands, vegetation/foliage lines, soil types, railroads, rock outcroppings and stone walls;
n) Dimensions and area of all property to be dedicated for public use of common ownership;
o) Location of 100 year flood hazard boundaries;
p) Date and permit numbers of all required state and federal permits.
q) Location of all buildings, wells and leach fields within one hundred and fifty (l50) feet of the parcel;
r) Dimensions, area and minimum setback requirements on all existing and proposed lots;
s) Proposed landscaping plan including size and type of plant material;
t) Pedestrian walks providing circulation through the site;
u) Location and size of proposed and existing signs, walls and fences;
v) Location and type of lighting for outdoor activities; and
w) Location, widths and purposes of any easements or rights-of-way.
x) Total on-site square footage of impervious surfaces.

E. Copies of the current deed, purchase and sale agreement, and copies of all easements, deed restrictions, rights-of-ways, or other encumbrances currently affecting the property. (Amended May 8, 2002)

F. The Applicant shall submit a completed Energy Considerations Checklist. Except for those items on the checklist with which compliance is required by specific regulation, such as the standards under Chapter 38 of the Town of Durham Code of Ordinances, the applicant is encouraged (but not required) to satisfy the objectives contained in the checklist. Prior to Planning Board site plan approval, the checklist must be submitted and the applicant must meet with a representative of the Durham Energy Committee and the Building Inspector. Thus, the checklist is required prior to approval, not acceptance of the application. (Amended May 8, 2013 and May 13, 2015)

G. For new buildings and additions to existing buildings, the items listed below related to the proposed architectural design of the exterior of buildings. The final architectural design is considered part of the site plan approval, and must be implemented in detail specifically as approved. (Amended May 8, 2013)

The elevation drawings shall be prepared by an architect, landscape architect, engineer, or architectural designer (Use of an architect for larger projects is strongly encouraged), but the Planning Board may waive this requirement for smaller or less prominent structures, or as it deems appropriate.

1) Three 24″ x 36″ copies and ten 11″ x 17″ copies of elevation drawings to scale of each pertinent façade. One 11′ x 17 copy of the elevation drawings in color.
2) A color board may be required at the option of the Planning Board showing actual color samples.
3) A material sample if required by the Planning Board, such as the type of brick that is proposed.
4) Information on any proposed building illumination.
5) Any other items related to the architectural design as deemed necessary by the Planning Board.

### *7.03 Additional Application Submission Requirements - All Personal Wireless Service Facilities*

A. General Filing Requirements

1) Written statement signed by the landowner and carrier that the lease between the carrier and the landowner of the subject property contains the following provisions:

a) Landowner or carrier can enter into leases with other carriers for co-location.

2) A written and signed statement from the landowner and applicant that he/she agrees that the Town may enter the subject property to obtain RFR measurements, to ensure conformance with the FCC Guidelines, and to obtain noise measurements, all at the expense of the applicant, but not necessarily accompanied by, the applicant and/or landowner.

B. Location Plan Filing Requirements

1) A town-wide map showing the other existing personal wireless service facilities in the Town and outside the Town within one (1) mile of its corporate limits.

2) A town-wide map that shows all existing and reasonably foreseen or contemplated personal wireless service facilities operated by the carrier in the Town.

3) Proof by the carrier of adequate comprehensive general public liability insurance for the proposed personal wireless service facility that provides coverage for damage or injury to persons or property caused by the carrier or its facility.

C. Site Plans for All Personal Wireless Service Facilities Shall Indicate:

1) Outlines of all existing buildings, including their purpose (e.g. residential buildings, garages, accessory structures, etc.) on the subject property and within three hundred (300) feet from the subject property boundary on adjacent properties.

2) Proposed location of antenna(s), mount(s), and equipment shelter(s).

3) Proposed security barrier, indicating type and extent as well as point of controlled entry.

4) The proposed lease area for the personal wireless service facility.

5) Location and type of electrical and telephone service. Underground service shall be provided, unless waived by the Planning Board.

6) Location of all roads, public and private, on the subject property including driveways proposed to serve the personal wireless service facility and the type of surface proposed for the driveway.

7) Distances, at grade, from the proposed personal wireless service facility to each building shown on the site plan.

8) All proposed changes to the existing property, including but not limited to grading, vegetation removal, and temporary or permanent roads and driveways.

9) Representations, dimensioned and to scale, of the proposed mount(s), antennas, equipment shelters, cable runs, parking areas and any other construction or development attendant to the personal wireless service facility. (Amended January 7, 1998)

### *7.04 Additional Site Plan Submission Requirements - Ground Mounted Personal Wireless Service Facilities:*

Excluding the reconstruction of existing facilities, the following shall be shown on a site plan for all ground mounted personal wireless service facilities, in addition to those items listed under Sections 7.02 and 7.03 of the Site Plan Review Regulations:

A. Tree cover by forest type and approximate height on the subject property and within three hundred (300) feet from the subject property boundary on adjacent properties.

B. Average tree canopy height within a one hundred and fifty (150) foot perimeter of the mount, security barrier, or designated clear area for access to equipment, whichever is greatest.

C. Any proposed landscape easement that includes the bearings and distances of the easement and general conditions of the easement.

(Amended January 7, 1998)

### *7.05 Application Submission Requirements-Recreational Playing Fields, Outdoor*

A. Policy

It is the policy of the Durham Planning Board to support and encourage outdoor recreation, and to facilitate the safe and reasonable use of private lands for non-commercial outdoor playing fields. It is recognized that this use may raise issues including but not limited to noise, traffic and traffic safety, parking, fertilizer, pesticide and herbicide use. It is also recognized that, unlike many other uses, this use is primarily intended to create a public benefit, and; this use does not require a long-term or irreversible commitment of land or capital.

B. Waiver

The Planning Board may, in order to implement the policy expressed in 7.05 A. above, and exercising reasonable discretion, waive or modify any or all of the provisions of Section 7.02 above, with the exception of 7.02 A. -C.; Section 8; and Section 9.

C. Unique Requirements

Given the intermittent and seasonal nature of this use, and the variability that may characterize impacts on abutters and the community at large, the Planning Board may impose conditions controlling timing (hours of use, frequency of use, start, end and duration of season), intensity (number of participants, noise restrictions, whether practice sessions, organized games, tryouts, tournaments are allowed), in addition to any design standards and required improvements that may be authorized under Section 9 and deemed necessary by the Planning Board. (Amended May 15, 2002)

## *SECTION 8: Construction Guarantee*

***8.01.*** The applicant shall post an acceptable financial surety prior to final Site Plan approval by the Planning Board. The financial surety shall be in an amount sufficient to ensure the completion of all roads (public or private), water service, sewage disposal, drainage, landscaping and/or any other improvements required by the Town. The financial surety shall be effective for a period mutually agreed upon by the Planning Board and the applicant. (Amended July 15, 1998)

***8.02.*** The financial surety shall be approved by the Town as to the form and type. The Town will accept cash, pass book savings in the Town's name, letter of credit or a construction surety bond. At its discretion, the Planning Board may require approval of the construction guarantee by the Town Attorney. A sample Construction Guarantee contract is included as attachment 5. (Amended July 15, 1998)

***8.03.*** The construction guarantee shall be released in phases as portions of the secured improvements or installations are final in accordance with the plan approved by the Board.

## *SECTION 9 - Design Standards and Required Improvements*

### *9.01 General Requirements*

A. Conformance to Applicable Laws, Rules and Regulations - In addition to the requirements established herein, all developments shall comply with the

applicable provisions of the Zoning Ordinance, Subdivision Regulations, and all other applicable Town ordinances.

B. Self Imposed Restrictions - If the owner places restrictions on any of the land contained in the development greater than those required by the Zoning Ordinance or these regulations, such restrictions or reference thereto may be required to be indicated on the site plan, or the Planning Board may require that restrictive covenants be recorded with the Strafford County Registry of Deeds in form to be approved by the Board.

C. Specification References -

1) Reference to State specifications shall mean Standard Specifications for Road and Bridge Construction of the New Hampshire Department of Transportation, approved and adopted 1992 as amended.

2) Reference to Uniform Traffic Control Devices shall mean the Manual on Uniform Traffic Control Devices for Streets and Highways, published by the U.S. Department of Commerce, Bureau of Public Roads.

### *9.02 Streets and Access*

A. Roads and/or driveways from development abutting the following main roads shall be spaced not less than 1,200 feet apart: Routes 4, 108, 155-A, Durham Point Road, Mill Road, Bennett Road, and Packers Falls Road. Where such spacing would cause undue hardship, the Board may modify this requirement. (For the purposes of these regulations Durham Point Road shall extend to the Newmarket Town line.)

B. All other roadway related regulations are contained in: Road Construction Regulations of the Town of Durham, New Hampshire, adopted by the Durham Planning Board

### *9.03 Stormwater Drainage* *(Amended July 14, 2010)*

A. General Requirements - All developments shall provide adequate management of stormwater runoff and prevent the discharge of stormwater runoff from creating or contributing to a water quality impairment. All applications shall be accompanied by a completed Site Plan Review Checklist (provided in Attachment 6 of these regulations) to the Planning Board prior to consideration for review. Developments that disturb 10,000 or more square feet must submit to the Planning Board for review and approval, a Stormwater Management Plan (Plan) describing all proposed stormwater management system elements, practices, and associated designs, including all calculations and analyses of said designs. However, if the applicant submits an approved

Alteration of Terrain (AOT) permit, there would be no need for the town requiring a Stormwater Management Plan. The applicant must still provide an operation and maintenance plan as provided for in (C) (5) below. The Planning Board reserves the right to require any development that disturbs less than 10,000 square feet to submit and then implement an approved Stormwater Management Plan (complete as described below or abbreviated) to prevent degradation of local water resources. All elements of the Plan must be designed/prepared by a New Hampshire Registered Professional Engineer in accordance with the Design Standards below. The Plan must contain the following parts and presented in the order listed below:

B. Stormwater Management Plan - Part I

1) An Existing Conditions Site Plan showing all pre-development surface water bodies and wetlands, drainage patterns, and watershed boundaries, buffer zones, topographic contours with minimum 2-foot intervals, scale bar, north arrow, title block with project name, applicant's name, and map and parcel number, designer's stamp and wetland scientist's stamp (if applicable), legend, locus plan, benchmarks, and appropriate notes with datum and other plan references, instructions, and detail descriptions. The Existing Conditions Site Plan shall be provided in hard copy (minimum 22-inch by 34-inch) at an appropriate scale in tens of feet per inch (maximum of 100 feet per inch) such that all important site and hydrologic features are easily recognized. Existing buildings, structures, pavement, utilities, and soils information with coding as HSG-A, B, C, or D shall be included on the Existing Conditions Site Plan. High Intensity Soil Survey (HISS) mapping may be required per request by the Planning Board.

2) A Proposed Conditions Site Plan showing all proposed post-development temporary and permanent stormwater management system elements and erosion and sediment control BMPs and all important hydrologic features. The Proposed Conditions Site Plan must be at the same scale as the Existing Conditions Site Plan with consistent title block, plan features, and descriptors including but not limited to the following:
    a. Existing and proposed topographic contours (2-foot minimum contour interval; 1-foot contour intervals may be required for sites with limited relief and/or where proposed stormwater outfalls are located adjacent to buffer zones)
    b. Proposed areas of disturbance with total area of disturbance clearly labeled in square feet
    c. Existing and proposed buildings and structures
    d. Stormwater discharge locations keyed to drainage analyses

e. Wells and sanitary protective radii
f. Septic systems
g. Plan references and notes (including sequence of soil disturbance)
h. Proposed and existing public and private utilities
i. Proposed project components to become property of or the responsibility of the Town shall be labeled as such
j. Existing and proposed impervious surfaces and pavements with areas used to calculate EIA clearly identified and the square footage of each type identified and labeled.

3) Details of individual design elements shown on separate plan sheets following the Proposed Conditions Site Plan.

C. Stormwater Management Plan - Part II

1) Drainage Analysis that includes calculations comparing Pre- and Post-Development stormwater runoff rates (cubic feet per minute) and volumes (cubic feet) based on a 1-inch rainstorm, and the 2-year, 10-year, and 25-year 24-hour frequency storms. Calculations shall include, but not be limited to, the sizing of all structures and BMPs including of sizing of emergency overflow structures based on assessment of the 100-year 24-hour frequency storm discharge rate. Phased applications for the original parcel apply as though the development of the entire parcel were proposed in one application at one time.

2) Drainage Analysis Results Summary tabulated for each proposed outfall or catchment outlet point including runoff rates and volumes for each storm event analyzed above.

3) An Erosion and Sediment Control Plan for all proposed construction activities in accordance with the most current New Hampshire Stormwater Manual.

4) Copies of any additional permits or plans required for compliance with Environmental Protection Agency (EPA) and/or New Hampshire Department of Environmental Services (NHDES).

5) A comprehensive Operation and Maintenance Plan for long-term maintenance of all proposed stormwater management elements and BMPs including the proposed schedule of inspections and anticipated maintenance.

### *9.03.1 Design Standards*

A. The Stormwater Management Plans submitted to the Planning Board shall meet the following minimum requirements:

1) Where applicable, the Plan must comply with the EPA Phase II Stormwater Rules and the Town's MS4 Stormwater Discharge Permit, as amended.

2) All proposed measures shall be in accordance with the NH Stormwater Management Manual volume (December 2008 or current revision) a copy of which is available from NHDES: des.nh.gov/organization/divisions/water/stormwater/manual.htm

3) Water Quality Protection: All aspects of the application shall be designed to protect the water quality of the Town of Durham's water bodies as follows:

   a. No person shall locate, store, discharge, or permit the discharge of any treated, untreated, or inadequately treated liquid, gaseous, or solid materials of such nature, quantity, noxiousness, toxicity, or temperature that may run off, seep, percolate, or wash into surface or groundwaters so as to contaminate, pollute, harm, impair or contribute to an impairment of such waters.

   b. All storage facilities for fuel, chemicals, chemical or industrial wastes, and biodegradable raw materials shall meet the standards of the New Hampshire Department of Environmental Services (NHDES).

   c. All projects under review by the Planning Board of such magnitude as to require a stormwater permit from EPA or NHDES shall comply with the standards of EPA and/or NHDES AOT program, with respect to the export of total suspended solids and other pollutants.

4) Stormwater Management For New Development: All proposed stormwater management and treatment systems shall meet the following performance standards:

   a. Existing surface waters, including lakes, ponds, rivers, perennial and intermittent streams (natural or channelized), and wetlands (including vernal pools) shall be protected by the minimum buffer

setback distances specified in the Zoning Ordinance. Stormwater and erosion and sediment control BMPs shall be located outside the specified buffer zone unless otherwise approved by the Planning Board. Alternatives to stream and wetland crossings that eliminate or minimize environmental impacts shall be considered whenever possible. When necessary, as determined by the Planning Board or their representative, stream and wetland crossings shall comply with state recommended design standards to minimize impacts to flow and enhance animal passage (see University of New Hampshire Stream Crossing Guidelines May 2009, as amended http://www.unh.edu/erg/stream_restoration/nh_stream_crossing_guidelines_unh_web_rev_2.pdf).

b. LID site planning and design strategies must be used to the MEP in order to reduce the generation of the stormwater runoff volume for both new and redevelopment projects. An applicant must document why LID strategies are not appropriate if not used to manage stormwater.

c. All stormwater treatment areas shall be planted with native plantings appropriate for the site conditions: grasses, shrubs and/or other native plants in sufficient numbers and density to prevent soil erosion and to promote proper treatment of the proposed runoff.

d. All areas that receive rainfall runoff must be designed to drain within a maximum of 72 hours for vector control.

e. Salt storage areas shall be covered or located such that no direct untreated discharges to receiving waters are possible from the storage site. Snow storage areas shall be located such that no direct untreated discharges to receiving waters are possible from the storage site. Runoff from snow and salt storage areas shall enter treatment areas as specified above before being discharged to receiving waters or allowed to infiltrate into the groundwater.

f. Runoff shall be directed into recessed vegetated and landscape areas designed for treatment and/or filtration to the MEP to minimize Effective Impervious Cover (EIC) and reduce the need for irrigation systems.

g. The Plan shall make provisions to retain stormwater on the site by using the natural flow patterns of the site. Effort shall be made to

utilize natural filtration and/or infiltration BMPs (i.e., bioretention areas, subsurface filtration/infiltration systems, ponds, swales, etc). Proof of such effort shall be provided to the Planning Board.

h. Measures shall be taken to control the post-development peak rate runoff so that it does not exceed pre-development runoff for the 2-year, 10-year and 25-year, 24-hour storm events. Similar measure shall be taken to control the post-development runoff volume to filtrate the WQv according to the following ratios of Hydrologic Soil Group (HSG) type versus infiltration rate multiplier: HSG-A: 1.0; HSG-B: 0.75; HSG-C: 0.4; HSG-D: 0.15. For sites where infiltration is limited or not practicable, the applicant must demonstrate that the project will not create or contribute to water quality impairment. Infiltration structures shall be in locations with the highest permeability on the site. Measures shall be taken to protect against on and off-site peak flow to prevent overloading of existing downstream facilities.

i. The biological and chemical properties of the receiving waters shall not be degraded by the stormwater runoff from the development site.

j. The design of the stormwater drainage system shall provide for the disposal of stormwater without flooding or functional impairment to streets, adjacent properties, downstream properties, soils, or vegetation.

k. The design of the stormwater management systems shall take into account upstream and upgradient runoff that flows onto, over, or through the site to be developed or re-developed and provide for this contribution of runoff.

l. Appropriate erosion and sediment control measures shall be installed prior to any soil disturbance such that the area of disturbance shall be kept to a minimum. Disturbed areas shall be stabilized within thirty (30) days.

m. Measures shall be taken to control erosion within the project area. Sediment in runoff water shall be trapped and retained within the project area using approved measures. Wetland areas and surface waters shall be protected from sediment.

n. All temporary control measures shall be removed after final site stabilization. Trapped sediment and other disturbed soil areas resulting from the removal of temporary measures shall be permanently stabilized prior to removal of temporary control measures.

o. Every effort shall be made to use pervious parking surfaces as an alternative to impervious asphalt or concrete for general and overflow parking areas. Pervious pavement shall be appropriately sited and designed for traffic and vehicle loading conditions.

p. Whenever practicable, native site vegetation shall be retained, protected, or supplemented. Any stripping of vegetation shall be done in a manner that minimizes soil erosion.

q. Whenever practicable, all subsurface filtration BMPs shall include perforated underdrains positioned a minimum of 8-inches above the bottom of the filter bed to prevent extended periods of saturated conditions.

5) Redevelopment Project Requirements: Because redevelopment may present a wide range of constraints and limitations, an evaluation of options may be proposed to work in conjunction with broader state watershed goals and local initiatives. Stormwater requirements for redevelopment vary based upon the surface area of the site that is covered by existing impervious surfaces. In order to determine the stormwater requirements for redevelopment projects, the percentage of the site covered by existing impervious areas must be calculated.

For sites meeting the definition of a redevelopment project and having less than 40% existing impervious surface coverage, the stormwater management requirements will be the same as other new development projects with the important distinction that the applicant can meet those requirements either on-site or at an approved off-site location, within the same watershed within the Town of Durham, provided the applicant satisfactorily demonstrates that impervious area reduction and LID strategies and BMPs have been implemented on-site to the MEP.

For redevelopment sites with more than 40% existing impervious surface coverage, stormwater shall be managed for water quality in accordance with one or more of the following techniques, listed in order of preference:

a. Implement measures onsite that result in an EIA of at least 30% of the existing impervious surfaces and pavement areas, and 50% of the additional proposed impervious surfaces and pavement areas through the application of porous media; or

b. Implement other LID techniques onsite to the MEP to provide treatment for at least 50% of the redevelopment area; or

c. Implement off-site BMPs to provide adequate water quality treatment for an area equal to or greater than 50% of redevelopment areas may be used to meet these requirements provided that the applicant satisfactorily demonstrates that impervious area reduction, LID strategies, and/or onsite BMPs have been implemented to the MEP. An approved off-site location must be identified, the specific management measures identified, and an implementation schedule developed in accordance with local review. The applicant must also demonstrate that there is no downstream drainage or flooding impacts as a result of not providing on-site management for large storm events. To comply with local watershed objectives the mitigation site should be situated in the same subwatershed as the development and impact the same receiving water.

6) Responsibility for Installation and Construction: The applicant shall bear final responsibility for the installation, construction, inspection, and disposition of all stormwater management and erosion control measures required by the provisions of these regulations. Site development shall not begin before the Stormwater Management Plan receives written approval by the Planning Board. Best Management Practices shall be installed as designed and scheduled as a condition of final approval of the plan.

7) Plan Approval and Review: The Planning Board shall approve the Stormwater Management Plan if it complies with the requirements of these regulations and other requirements as provided by law. At the discretion of the Planning Board, a technical review by a third party may be required of any stormwater management and erosion control plan prepared under these regulations. The technical review shall be performed by a qualified professional consultant, as determined by the Planning Board, and the expense of which shall be the full responsibility of the applicant.

8) Maintenance and Inspection:

a. After final Planning Board approval and as a condition precedent thereto, the owner of record of the property shall cause notice of the requirements for maintenance pursuant to the stormwater management and erosion and sediment control plans, as approved by the Planning Board, to be recorded at the Registry of Deeds sufficient to provide notice to all persons that may acquire any property subject to the stormwater management and sediment control plans. See RSA 477:3-a. The notice shall comply with the applicable requirements for recording contained in RSA 477 and 478. The notice need not set forth the requirements at length, so long as it is sufficient to provide notice to prospective purchasers of the requirements for maintenance pursuant to the stormwater management and erosion and sediment control plans as approved by the Planning Board. The Planning Board may require routine inspections to insure compliance with the Stormwater Management, Groundwater Protection, Impervious Surfaces, and Erosion and Sedimentation Control sections of these regulations. Such inspections shall be performed by a designated agent with appropriate certifications at reasonable times to the landowner.

b. If permission to inspect is denied by the landowner, the designated agent shall secure an administrative inspection warrant from the district or superior court under RSA 595-B.

***9.03.2 - Reimbursement***

The applicant shall reimburse the Town for the Planning Board's administrative expenses and costs of special investigation and the review of documents and other matters that may be required by particular applications. This includes, but is not limited to, review by consulting engineers or other consultants to assess the environmental impact, hydrological impact, ground water quality impact, traffic impact, or any other study deemed necessary by the Planning Board in order to make an informed decision."

***9.03.3 Waivers & Exceptions***

For reasons heretofore well demonstrated, the Planning Board may waive one or more of these regulations. The following activities are considered exempt from preparing and submitting stormwater management plans:

1. Agricultural practices located outside the wetland and surface water buffers
2. Road and parking lot resurfacing.

### *9.04 Water Supply*

A. General Requirements - All developments in the state of New Hampshire shall make adequate provision for a water supply of potable water for domestic consumption and for water supply for fire protection purposes. All water supply systems and facilities shall be designed and stamped by a registered engineer.

B. Required Improvements
   1) The location of individual private wells shall comply with all standards of the New Hampshire Water Supply and Pollution Control Commission.

   2) A private central water system, serving two or more lots or users, shall conform with and meet all standards set for community water services as established by the New Hampshire Water Supply and Pollution Control Commission (WSPCC) even though the WSPCC may not invoke jurisdiction in all cases.

### *9.05 Sewerage*

A. General Requirements - All developments shall make adequate provision for sanitary sewage disposal facilities. The facilities shall be designed and stamped by a registered engineer. Sanitary sewage disposal shall be accomplished through the provision of individual waste disposal systems or a private central sewerage system.

B. Design Standards - Sanitary waste disposal may be accomplished by either of the following methods:

   1) Individual disposal systems, the design and location of which shall be approved by the State of New Hampshire Water Supply and Pollution Control Commission. The systems shall be located on private property, no closer than seventy-five (75) horizontal feet to a watercourse, a waterbody, a wetland, or a well that is being used as a source of individual water supply.

2) A private central sewerage system, the design and location of which shall be approved by the State of New Hampshire Water Supply and Pollution Control Commission. Maintenance and operating costs of the system shall be borne by the developer.

### *9.06 Non-Municipal Utilities*

A. General Requirements - The applicant is responsible for all coordination with utility companies to assure that non-municipal utilities are installed in accordance with plans approved by the Board pursuant to these regulations.

B. Design Standards - All utility facilities, including but not limited to electric power and telephone shall be located underground throughout the development. Whenever existing utility facilities are located above ground, they shall be removed and placed underground. Existing utilities which are located within public rights-of-way are exempted from this provision. The Board shall review and approve the location of all non-municipal utility lines.

### *9.07 Signs*

A. General Requirements - Signs are intended for the identification of the use on the site on which they are located. Signs shall not be a hazard or nuisance by virtue of their location or illumination.

B. Design Standards - Sign size, type, location, height, and illumination shall conform to the requirements of Durham Zoning and Land Use Ordinance.

### *9.08 Preservation of Natural Features and Amenities*

A. General Requirements

1) Grading and clearing should be minimized so as to avoid creating undue erosion or interruption of natural drainage ways. Particular attention should be given to natural features suitable as buffer strips between residential subdivisions abutting commercial or industrial areas. Similar natural features that provide buffers between lots, or sections of a development should be preserved to enhance privacy and attractiveness. Provision for clearing may be made for southerly exposure for solar access to dwellings or buildings.

2) Developers shall use construction methods which cause the least disturbance to the environment possible. No cut trees, stumps, debris, junk, rubbish, or other waste materials of any kind shall be buried in any land, or left or deposited on any lot or street at the time of issuance of a certificate of occupancy, and removal of same shall be required prior to issuance of any certificate of occupancy. Nor shall any debris be left or deposited in any area of development at the time of expiration of the performance bond or dedications of public improvements, whichever is sooner.

### *9.09 Special Flood Hazard Areas:*

All site plan proposals governed by these regulations having lands identified as Special Flood Hazard Areas in the "Flood Insurance Study for the Town of Durham, N.H." together with the associated Flood Insurance Rate Maps and Flood boundary and Floodway maps of the Town of Durham shall meet the following requirements:

A. Site Plan proposals, including their utilities and drainage, shall be located and designed to be consistent with the need to minimize flood damage.

B. All public utilities and facilities, such as sewer, electrical and water systems shall be located and constructed to minimize or eliminate flood damage.

C. Adequate drainage shall be provided to reduce exposure to flood hazards.

1) New and replacement water systems (including on-site systems) shall be located, designed and constructed to minimize infiltration and avoid impairment.

2) New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the systems and discharges from the systems into flood waters.

D. Within the altered or relocated portion of any watercourse, the applicant shall submit to the Planning Board certification provided by a registered professional engineer assuring that the l00 year flood carrying capacity of the watercourse has been maintained.

E. All site plan proposals shall include l00-year flood elevation data.

### *9.10 Design Submittal Standards - All Personal Wireless Service Facilities*

A. Brochures. Equipment brochures for the proposed personal wireless service facility such as manufacturer's specifications or trade journal

reprints shall be provided for the antennas, mounts, equipment shelters, cables as well as cable runs, and security barrier, if any.

B. Materials. Materials of the proposed personal wireless service facility specified by generic type and specific treatment (e.g., anodized aluminum, stained wood, painted fiberglass, etc.). These shall be provided for the antennas, mounts, equipment shelters, cables as well as cable runs, and security barrier, if any.

C. Colors. Colors of the proposed personal wireless service facility represented by a color board showing actual colors proposed. Colors shall be provided for the antennas, mounts, equipment shelters, cables as well as cable runs, and security barrier, if any.

D. Dimensions. Dimensions of the personal wireless service facility specified for all three directions: height, width and breadth. These shall be provided for the antennas, mounts, equipment shelters and security barrier, if any.

E. Photographs. Appearance shown by at least two (2) photographic superimpositions of the personal wireless service facility within the subject property. The photographic superimpositions shall be provided for the antennas, mounts, equipment shelters, cables as well as cable runs, and security barrier, if any, for the total height, width and breadth.

F. Lighting. If lighting of the site is proposed, the applicant shall submit a manufacturers computer-generated point-to-point printout, indicating the horizontal foot-candle levels at grade, within the property to be developed and twenty-five (25) feet beyond the property lines. The printout shall indicate the locations and types of luminaries proposed.

G. Co-location. Carriers shall share personal wireless service facilities and sites where feasible and appropriate, thereby reducing the number of personal wireless service facilities that are stand-alone facilities.

1) All applicants for site plan review for a personal wireless service facility shall demonstrate a good faith effort to co-locate with other carriers. Such good faith effort includes contact with all the other carriers for personal wireless services operating in the Town of Durham or in adjoining or nearby jurisdictions.

2) If the applicant intends to co-locate or to permit co-location, drawings and studies which show the appearance and operation of the personal wireless service facility with maximum co-location shall be provided.

3) If the Planning Board approves co-location for a personal wireless service facility site, the site plan shall indicate how many facilities and of what type shall be permitted on that site. Facilities specified in the site plan approval shall require no further zoning approval, but shall require a Building Permit. However, the addition of any facilities not specified in the approved site plan shall require a new site plan.
(Amended January 7, 1998)

### *9.11 Noise Standards - All Personal Wireless Service Facilities:*

The applicant shall provide a statement listing the existing and maximum future projected measurements of noise from the proposed personal wireless service facilities, measured in decibels Ldn (logarithmic scale, accounting for greater sensitivity at night). Such statement shall be certified and signed by an acoustical engineer, stating that noise measurements are accurate and meet the Noise Ordinance of the Town of Durham and such statements shall include the following:

A. Existing, or ambient: the measurements of existing noise.

B. Existing plus the proposed personal wireless service facilities: maximum estimate of noise from the proposed personal wireless service facility plus the existing noise environment.

C. Existing plus the proposed personal wireless service facilities plus cumulative: maximum estimate of noise from the proposed personal wireless service facility plus the maximum estimate of noise from the total addition of co-located personal wireless service facilities plus the existing noise environment.

### *9.12 Radio Frequency Radiation (RFR) - All Personal Wireless Service Facilities:*

The applicant shall provide a signed and stamped certificate by an RF Engineer stating that the maximum radio frequency radiation of the personal wireless service facility and the cumulative RFR of any existing personal wireless service facilities at the site will not exceed the FCC Guidelines. The FCC Guidelines shall be incorporated as part of this certification. (Amended January 7, 1998)

### *9.13 Environmental Filing Requirements - All Personal Wireless Service Facilities*

A. The National Environmental Policy Act (NEPA) applies to all applications for personal wireless service facilities. NEPA is administered by the FCC via procedures adopted as Subpart 1, Section 1.1301 et seq. (47 CFR Ch. I). The FCC requires that an environmental assessment (EA) be filed with the FCC prior to beginning operations for any personal wireless service facility proposed in or involving any of the following:

1) Wilderness area.

2) Wildlife preserve.

3) Threatened or endangered species.

4) Historical site.

5) Native American religious site.

6) Floodplain.

7) Wetland.

8) High intensity white lights in residential neighborhoods.

9) Excessive radio frequency radiation exposure.

B. At the time of application filing, an EA that meets FCC requirements shall be submitted to the Town for each personal wireless service facility site that requires such an EA to be submitted to the FCC. In addition, a letter of concurrence substantiating the finding of the applicant for each of the NEPA checklist items shall be provided with the site plan application.

C. The applicant shall list the location, type, and amount (including trace elements) of any materials proposed for use within the personal wireless service facility that are considered hazardous by the federal, state, or county government, or by the Town of Durham.

(Amended January 7, 1998)

***9.14 Structural Report for All Ground Mounted Personal Wireless Service Facilities:*** The applicant shall provide a report prepared by a licensed professional civil engineer describing the facility and specifying the maximum number and types of antennas the facility is designed to accommodate. The report shall bear the seal of the engineer that prepared the report.

(Amended January 7, 1998)

***9.15 Visibility Standards for Ground Mounted Personal Wireless Service Facilities, Excluding Reconstruction of Existing Facilities***

A. Sight Lines. Lines representing the sight line showing the viewpoint (point from which view is taken) and visible point (point being viewed) as described below:

1) Sight line representation. A sight line representation shall be drawn from any public road within three hundred (300) feet and the closest facade of each residential building (viewpoint) within three hundred (300) feet to the highest point (visible point) of the personal wireless service facility. The three hundred (300) foot measure shall be measured from the subject property boundary. Each sight line shall be depicted in profile, drawn at one inch equals forty (40) feet. The profiles shall show all intervening trees and buildings. In the event there is only one (or more) residential building within three hundred (300) feet, there shall be at least two sight lines from the closest habitable structures or public roads, if any.

2) Existing (before condition) photographs. Each sight line shall be illustrated by one (1) four-inch by six-inch or larger color photograph of what can currently be seen from any public road or residential building identified above.

3) Proposed (after condition). Each of the existing condition photographs shall have the proposed personal wireless service facility superimposed on it to show what will be seen from public roads and residences if the proposed personal wireless service facility is built.

B. Elevations. Siting elevations, or views at-grade from the north, south, east and west for a fifty (50) foot radius around the proposed personal wireless service facility plus from all existing public and private roads that serve the subject property. Elevations shall be at either one-quarter inch equals one foot or one-eighth inch equals one foot scale and show the following:

1) Antennas, mounts and equipment shelter(s), with total elevation dimensions and AGL of the highest point.

2) Security barrier. If the security barrier will block views of the personal wireless service facility, the barrier drawing shall be cut away to show the view behind the barrier.

3) Any and all structures on the subject property.

4) Existing trees and shrubs at current height and proposed trees and shrubs at proposed height at time of installation, with approximate elevations dimensioned.

5) Grade changes, or cuts and fills, to be shown as original grade and new grade line, with two-foot contours above mean sea level.

C. Balloon Test. Within fourteen (14) days of the acceptance of the site plan application by the Planning Board, the applicant shall arrange for a balloon or crane test at the proposed site to illustrate the height of the proposed facility. The date, time and location of such test shall be advertised in a newspaper of general circulation in the Town at least ten (10) days prior to the test. (Amended January 7, 1998)

### *9.16 Architectural Design Regulations* (Enacted November 14, 2012)

**OVERVIEW**

**A) Findings.** The Town of Durham finds that:

1) Much of Durham reflects 18th, 19th, and 20th century architectural styles as it has evolved over time from a small village. The town contains a handsome, historic core that embodies a fine architectural tradition, a colorful history, and much visual appeal.

2) Preserving and enhancing this area is essential to maintaining the character and identity of our community.

3) Building designs which: a) are indifferent to the defining features of our town and to surrounding context; b) do not consider the quality of the pedestrian environment; c) introduce design elements which are incompatible with our traditional character; d) aggressively seek the attention of passing motorists; or, e) are erected at very low cost without due concern for aesthetics, harm our community, depress property values, and degrade our quality of life.

4) While subjectivity and judgment are invariably part of reviewing architectural designs, generally accepted principles of good design among design professionals schooled in traditional architecture provide guidance.

**The Three Chimneys Inn** (1)

5) Well-crafted architectural standards promote building design that is functional, economical, attractive, and harmonious. Quality design and sustainable economic development are not mutually exclusive; rather, they are interdependent.

**B)** **Purpose.** It is the intent of these regulations (or "standards") to inspire architects, designers, developers, and builders to produce beautiful structures, respectful of place, context, and tradition. Adherence to these regulations should not be burdensome and they are by no means intended to stifle creativity or variety. On the contrary, it is hoped that they will encourage applicants to produce more thoughtful designs. There is much flexibility embodied in these regulations and many ways of meeting the objectives. The purpose of these Architectural Design Regulations is to accomplish the following:

1) Provide for high-quality, human-scale architecture that conforms with generally accepted traditional design principles and is sensitive to neighboring buildings, streetscapes, the broader setting, and our natural and cultural resources;

2) Encourage design which is compatible with the architectural heritage of Durham, New Hampshire, and New England;

3) Enhance property values and foster civic pride;

4) Strengthen commercial vitality and promote the downtown as a welcoming, pedestrian and bicyclist-oriented destination, while maintaining the feel of a small town that is important to Durham residents.

5) Minimize potential conflicts between residential and nonresidential uses and between single family and multifamily uses; and

6) Create a sense of order, substance, and visual clarity in the built environment.

**C)** **Authority.** This section is adopted pursuant to the Town of Durham 2000 Master Plan, 2009 Commercial Core Strategic Plan, and 2011 Architectural Visual Preference Survey, and to the New Hampshire Revised Statutes Annotated section 674:44 - Site Plan Review Regulations.

**D)** **Applicability.** Architectural Design Review, under these regulations, is required as part of Site Plan Review as follows:

1) Applicability. Review is required for buildings containing - or intended to contain, in the case of vacant units - any nonresidential use or multifamily use (as defined in Subsection 1.01 Authority of these Site Plan Review

Regulations to mean any building containing more than two dwelling units).

2) Exterior architectural appearance. Review is required for any activity which would affect the exterior architectural appearance in any significant manner - including new construction, additions, alterations, demolitions, and relocation - of any building situated in one of the five zoning districts which constitute the Core Commercial area.

3) Core Commercial. The Core Commercial area comprises the Central Business, Church Hill, Coe's Corner, Courthouse, and Professional Office Districts.

4) Historic District not included. ***These regulations do not cover any areas within the Core Commercial area which are part of the Durham Historic District***, as defined in Article XVII – Durham Historic Overlay District of the Durham Zoning Ordinance and on the Durham Zoning Map. (A companion set of regulations is in place or being developed for the Historic District.) Note that the entirety of the Coe's Corner and Professional Office Districts are located outside of the Historic District, most of the Central Business and Courthouse Districts are located outside of the Historic District, and only a very small part of the Church Hill District (three landlocked lots without street frontage) is located outside of the Historic District.

5) Exemptions. Review is not conducted for:
   a) any activity, including general maintenance, that would have no effect on the exterior architectural appearance in any significant manner, as reasonably determined by the Planning Board;

   b) repainting where substantially the same color(s) is(are) used as presently on the building; and

   c) repair or replacement of materials where substantially the same material is used.

6) Zoning Ordinance. In the case of any conflict with the Zoning Ordinance, the provisions of the Zoning Ordinance shall prevail.

7) Signage not subject to review. These regulations do not apply to signage, whether freestanding or placed on a building, nor to lighting for signage (See Article XXIII. Signs and Utility Structures in the Zoning Ordinance).

**E) Process**

1) Materials. As appropriate, applicants shall submit the following:

a) Precise elevation drawings drawn to scale of each impacted façade visible under the provisions of D) 5), above;

b) A color board containing actual color samples of exterior finishes, keyed to the elevations;

c) A material sample, if requested, such as the type of brick proposed;

d) Any other items which the Planning Board determines are necessary in order to conduct its review such as detail drawings, photographs, and product brochures; and

e) Any proposed exterior building illumination (except for signage).

2) Designer. There is no requirement for drawings to be prepared by an architect or architectural designer (unless otherwise required by state law), but use of an architect or architectural designer is strongly encouraged, especially for larger projects and for new construction. In most cases, this will significantly facilitate the review and approval process.

3) Conformance with standards. All applicable design elements shall be in conformance with these regulations as reasonably interpreted and applied by the Planning Board. An application is considered to meet these regulations if the Planning Board, in its reasonable judgment, determines that the application overall demonstrates conformity with these regulations.

4) Waiver requests. Waivers shall be reviewed in accordance with the criteria stated in RSA 674:44 III.(e), as may be amended in the future. The basis for any waiver granted by the planning board shall be recorded in the minutes of the board. The planning board may only grant a waiver if the board finds, by majority vote that:

   (a) Specific circumstances relative to the site or conditions of the land, indicate that the waiver will properly carry out the purpose and intent of the regulations; or

(b) Strict conformity would pose an unnecessary hardship to the applicant and the waiver would not be contrary to the spirit and intent of the regulations. For the purposes of this provision, "unnecessary hardship" means that, owing to special conditions of the property that distinguish it from other properties in the area:

(i) No fair and substantial relationship exists between the general public purposes of the provision and the specific application of that provision to the property; and

(ii) The proposed use is a reasonable one.

5) Re-evaluation. Within 18 months of the time of adoption of these regulations the Planning Board shall hold a public hearing to evaluate the effectiveness of these regulations. The Planning Board shall make appropriate changes, if any, to these regulations following the public hearing. If deemed appropriate at that time, another time in the future shall be set for an additional public hearing.

**F) Using these regulations**

1) Readers are encouraged to become familiar with the architectural features of each Zoning District within the Commercial Core area as described in the section titled "Overview of Zoning Districts." Specific principles outlined in the remainder of this document may then be better understood in context.

2) Definitions. ***A Definitions section is included at the end of these regulations. Applicants and Planning Board members are encouraged to consult this section to facilitate discussion.***

3) Other terms herein. The following additional terms shall also apply:

a) "Shall" means the element or action is required.

b) "Shall not" means the element or action is prohibited.

c) "Appropriate" means the element or action is permitted and desirable.

d) "Inappropriate" means the element or action is not permitted.

e) "Encouraged," means the particular action or item is desirable, but not required.

3) Applicability across sections. Principles discussed in one section apply to other sections, as appropriate. For example, awnings are discussed under Storefronts because most awnings are used as part of a commercial storefront. However, where awnings might be used on a multifamily structure, the same principles will generally apply.

4) Illustrations. Photographs or drawings depicting specific appropriate features and inappropriate features are included in most sections. For any given building, including "signature buildings," the illustration will invariably show both appropriate and inappropriate features, but the pertinent features are generally highlighted. To clarify, for a building shown under "APPROPRIATE" it shall not be inferred that all aspects of that building, or even the building overall, are(is) appropriate; likewise, inclusion of a building under "INAPPROPRIATE" does not necessarily mean that all aspects of the building, or even the building overall, are(is) inappropriate. (Note. *No buildings highlighted under "INAPPROPRIATE", or used as examples of what not to do, are located in Durham*. All photographs were taken by Michael Behrendt, except where otherwise noted.)

## DESIGN STANDARDS

### G) Overview of zoning districts.

1) **Central Business Zoning District**.

a) General character. The Central Business District embodies the most urban and formal character. However, the district is underdeveloped, and there is a need for substantial infill and redevelopment, especially on Pettee Brook Lane. Main Street is the primary street in the district and the most pedestrian oriented, and is thus the most sensitive thoroughfare.

b) Signature buildings. These signature buildings help to define the Central Business District:

**40 Main Street** (2)

**60 Main Street** (3)

**Libby's Building** (4)

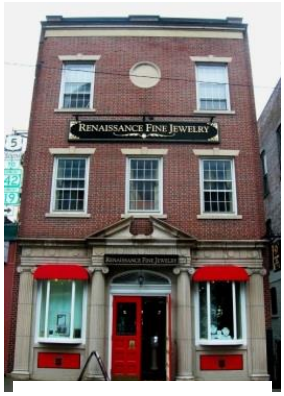
**The Grange – Italianate style** (5)

**Joshua Ballard House** (6)

c) <u>Prototypes – old buildings</u>. The ideal prototype for the Central Business District is a three story brick building like these three below. Note the simplicity of form, the regular pattern of fenestration, the single (not double) windows, the verticality of the windows, the high quality of the materials, and the fine proportions.

**Dover** (7)

**Portland, ME** (8)




**Brattleboro, VT** (9)

d) <u>Good examples – new buildings</u>. Here are examples of relatively new buildings that can also, generally, serve as models for new construction:

**Williamstown, MA** (10)

**Storrs, CT** (11)
(photographer unknown)

**Exeter** (12)

**Dover** (13)

**Portsmouth** (14)

**Camden, ME** (15)
(photographer unknown)

e) Streetscape. Newmarket's Main Street, below, is highly varied, presenting an inconsistent, though interesting (if not "funky") streetscape. Brattleboro, VT's, on the other hand, is highly regular, creating a strong street wall, though one that would likely be too urban and intensive for Durham.

**Newmarket** (16)

**Durham Charrette** (B. Dennis Design) (17)

**Brattleboro, VT** (18)

Using the three-story, flat roofed, brick structure (like the three examples under Prototypes – Old Buildings, above) as the basic building block, Durham's Central Business District ideally would present a harmonious and integrated, but richly varied, street wall composed of:

- two and a half, three, three and a half, and (where and if permitted under the Zoning Ordinance, and deemed appropriate) four and five story buildings;
- flat roofs and pitched roofs;
- front-facing gables and side-facing gables;
- gables with and without dormers;
- brick and clapboard-sided structures;
- three-bay, four-bay, five-bay, and wider structures; and
- carefully-placed iconic elements like the tower in the rendering, immediately above.

**2) Church Hill Zoning District.**

a) General character. Among the five zones in the Core Commercial area, Church Hill has the most distinct character and is thus most sensitive to inappropriate development. The district is composed primarily of relatively large Georgian/Colonial Revival style residential structures sided in wood clapboard, some dating from the early periods of Durham's settlement. The rural past is evident in the number of barns and outbuildings that survive.

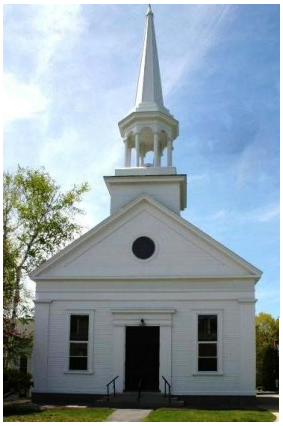
Two prominent churches –one resembling a traditional New England meeting house and one a contemporary stone structure - are situated diagonally across from each other at the top of the hill. Most houses are set back 10 to 15 feet from the sidewalk. The landscaped lawns and shade trees are an important feature of this district.

The residential structures are generally 2-1/2 stories high with the gable roofs turned perpendicular to the street. Most have highly regular fenestration and are symmetrical with five bays (often with outer windows placed closer together) and a center entrance, along with a porch or portico.

Although the Grange building is situated in the Central Business District, its recent renovation provides a model for redevelopment in Church Hill. The historic building was restored and a well-designed, though sizable new structure, largely screened from the street, was added at the rear.

New development shall be designed to resemble a single-family house, as generally described above, rather than an apartment block. The conversion of a residential structure for a non-residential use shall not alter the essential residential character of the building.

b) Signature buildings. Here are some signature buildings that help to define the character of Church Hill:



**Durham Community Church**
**Greek Revival style**
**(Photograph by Roger Hawk)** (19)

**Georgian Style** (20)

**The Red Tower – Colonial Revival style** (21)

3) **Coe's Corner Zoning District.**

a) General character. Coe's Corner is the least intensively developed and most rural part of the Core Commercial area. It is generally heavily wooded with deeper setbacks so many houses are minimally visible from the road, making the area less sensitive than some other districts. Most buildings are wood frame and simple in form with gable roofs, with the exception of the Italianate-style Pines Bed and Breakfast (below), with its picturesque style and complex massing. Informal layouts of buildings and styles, including barn-type buildings, are appropriate in this district.

b) Signature buildings. Here are some signature buildings that help to define the character of Coe's Corner.

**The Pines Bed and Breakfast** (22)

**Dover Road** (23)

4) **Courthouse District**

a) General character. With the exception of a few sites, the Courthouse District is largely geared toward automobile traffic, and indeed has sometimes been referred to as "Gasoline Alley." It is the only section in the Core Commercial area where highway-oriented uses are appropriate, and this is reflected in the Zoning Ordinance. Nonetheless, within this rubric, strong design standards are still important.

Buildings shall be placed as close to the street as practical (in accordance with the Zoning Ordinance) and there shall be no parking situated directly in front of buildings. Parking shall be situated behind the building if practical. If not practical it may be placed on the side of the building provided the parking area is no closer to the street than the main wall of the building.

b) Signature buildings. Here are some signature buildings that help to define the character of the Courthouse District. It is noted, however, these buildings are not located in the automobile-oriented section of the district, along Route 108 heading toward Dover.

**Holiday Inn Express** (24)

**Old Courthouse – Federal Style** (25)

c) Good examples – new buildings. Here are some examples of high-quality, new automobile-oriented designs:

**Epping** (26)

**Exeter** (27)


**Lee** (28)

5) **Professional Office District**

a) General character. Buildings in this district are highly eclectic - in age, size, building material, use, and architectural style. Nonetheless, there are a number of good models from the late 19th and early 20th centuries in New Englander, Dutch Colonial, Foursquare, and brick Georgian Revival styles all along Madbury Road. Front porches also serve as a unifying theme in this district. Because of the deeper setbacks, greater amount of tree cover, and eclectic styles of architecture, the Professional Office District is not as sensitive as the Central Business and Church Hill Districts.

b) Signature buildings. Here are some signature buildings that help to define the character of the Professional Office District.

**New Englander** (29)

**Georgian Revival** (30)

**Foursquare** (31)

## H) General Principles

1) Core Commercial zones. Many principles in these regulations apply throughout the Core Commercial area, but each of the five pertinent zoning districts has its own individual character which shall be recognized and reinforced, as discussed above.

**Portland, ME** (32)


**Portland, ME** (33)

2) Traditional idiom. No particular architectural style is stipulated but buildings shall be harmonious with traditional Durham, New Hampshire and/or New England architecture. Thus, the general approach should express traditional or neo-traditional design. However, innovative design is not discouraged provided it is respectful of context and these principles, thus allowing for some deviation from traditional/ neo-traditional design . Incorporation of distinctive details, materials, and finishes that mark a building as contemporary, within an otherwise traditional design, is appropriate. For example, see both the lantern and the canopy and eaves on these two recently-built Portland, Maine buildings, to the right.

3) Traditional building styles. Typical traditional building styles used over the years in Durham generally include the "formal" or "rational" styles - Georgian, Federal, Greek Revival, Colonial Revival, and Neoclassical, as well as Victorian styles, notably Italianate. (Examples are highlighted throughout.)

4) Details. Designers may use the traditional architectural vocabulary (e.g. gables, porticos, beltcourses) in an original manner that reads as contemporary.

5) Harmony. Designs shall be harmonious with the prevailing character of the zoning district, the surrounding streetscape, and neighboring buildings – in terms of all of the elements discussed in this Design Standards section - recognizing that this objective can be complicated when components of the prevailing character do not conform with the goals of these regulations.

6) Modifications. Modifications and additions to existing buildings shall be harmonious with the character of the existing building, recognizing that this objective can be complicated when components of the existing building do not conform with the goals of these regulations.

7) Features of the site. Building design shall blend with other features of the site - signage, landscaping, lighting, fencing, outbuildings, natural features, and other elements - to the extent practical.

8) Variety within unity. The Town strives to achieve "variety within unity," wherein a mix of forms is encouraged, but where these various forms are harmonious with one another. Overall uniformity can be monotonous. Well-executed exceptions to general approaches can contribute to, rather than detract from, the standard approach by providing visual interest that conveys liveliness. One excellent strategy to achieve variety within unity, for example, is for neighboring buildings of different but harmonious styles to share the same level for window sills on upper stories.

9) Preservation. Applicants are encouraged (but not required) to preserve existing structures and features that have special architectural, historical, cultural, or contextual value.

10) Visibility. The less visible or prominent a structure or façade, the more flexibility in applying the standards. For example, less strict review is in order for a building located a good distance from the road or for one that is partly obscured by another structure.

11) Chain designs. Many national and regional chain businesses seek to build a standard design across the country or region without regard to local conditions. However, all proposed chain business designs shall be evaluated for conformance with these Architectural Standards. It shall be the responsibility of the applicant to develop designs that are compatible with Durham's character; the Planning Board need not accommodate such template designs.

12) Integrity. Buildings shall possess an overall integrity of character, form and detail and convey a sense of seriousness and dignity. All building elements shall be integrated into a coherent, unified design; kitsch, as exemplified in the two buildings to the right, onto which colonialesque features have been appended, shall be avoided.

**Portland, Maine** (34)

**Rochester** (35)

## I) Siting of buildings

1) Parallel or perpendicular. Buildings shall be placed parallel or perpendicular to the street in order to create a sense of order. For buildings further from the Town center, including Coe's Corner, when there are strong topographic constraints or buildings are well buffered from the street, there is more flexibility with this principle.

2) Front Setbacks. Buildings shall generally be set back from the public right of way consistent with, but no further back than, buildings on neighboring properties (subject to zoning requirements). The purpose is to create a sense of enclosure of the street, enhancing its pedestrian-oriented character. This is less important in the Courthouse and Coe's Corner Districts. In the Central Business District buildings shall generally be positioned at the back edge of the sidewalk. Deeper setbacks that create a forecourt shall be reserved for important civic buildings, such as government buildings and churches, or for special designs, such as a restaurant that creates seating in a front plaza.

3) Side setbacks. Side setbacks shall be harmonious with those of neighboring structures - recognizing that some variation in spacing is appropriate based upon the scale, mass, and form of the ensemble of buildings – to create a pleasing, balanced rhythm.. In the Central Business District, there shall be no or minimal side setbacks to enhance a strong sense of enclosure.

4) Creating courtyards. To the extent practical, for open areas (parks or parking lots), whether fronting on a street or situated away from the street, buildings shall be configured to create rectilinear spaces in order to enhance the sense of meaningful, usable space.

***Appropriate*** ***Inappropriate***

**This commercial block in downtown Dover is placed right up to the sidewalk.** (36)

**The Newmarket Post Office is set back from the street by a parking lot in front, disrupting the downtown streetscape.** (39)

**The Valentine Smith house on Church Hill is set back consistent with neighboring el**

**A deep front setback, plaza, or courtyard is appropriate for a distinctive civic building like St. George's Church.** (38)

**This building is turned at an odd angle to the street, disrupting the**

**The drive-through on the side of this building disrupts the downtown streetscape. Proposed drive-throughs shall be reviewed in the context of zoning provisions.** (41)

## J) Scale and Massing

1) Human *scale*. Buildings shall above all possess a human scale, both in terms of their overall size and in their details and materials, in order to promote a sense of pedestrian friendliness.

2) Unbroken elements. Blank walls, uninterrupted windows, and blocky, unbroken elements add to the sense of an oversized, non-human scale, and are thus inappropriate.

3) Simplicity of form. A building shall generally have one main block which is discernible as such. It shall have a simple form with subordinate geometric masses appended to it, such as the roof, a porch, a side ell, and/or a projecting front pavilion. The Red Tower (under Appropriate examples, below) exemplifies this principle. However, a well-designed building with a very simple form, good materials, and good proportions, with no subordinate masses, is often the most beautiful of all structures (see the Joshua Ballard house under Signature Buildings in the Central Business District, above).

4) Smaller masses. Especially large structures shall be broken into smaller masses, or even made to appear to be separate buildings, in order to provide human scale, variation, and depth. These smaller masses shall have a strong relationship to one another and each smaller mass shall have integrity of form (see the Portsmouth building under Appropriate, immediately below).

6) Prominent locations. Where it is workable, iconic buildings and building elements, such as towers (see the examples under G) 1) e) in the "Durham Charrette" illustration and under L) 2) in the "An iconic structure – Dover" photograph), shall be incorporated at prominent locations and to *terminate vistas*.

***Appropriate***

**The curving front on this Dover building anchors the corner nicely.** (42)

**The main block, clearly discernible on the Red Tower is broken up by regularly spaced windows and various appended forms**. (43)

**Durham Town Hall reads as two separate buildings (which it actually was) connected by a passageway.** (44)

***Inappropriate***

**This magnificent building in the heart of downtown Dover would simply be too large for Durham. Its imposing scale is amplified by the use of large blocks of rough-faced granite.** (47)

**While the materials, upper story setbacks, and landscaping mitigate the mass of this Portland, Maine building, the scale is still much too large for Durham** (48)

**The multitude of gables here creates confusion and disharmony. (Photographer unknown)** (49)

**These new buildings in Portsmouth are actually one structure dressed up to look like three. (photographer unknown)** (45)

**In this new structure in Exeter, also evoking three buildings, the three sections are poorly integrated. The building pales in comparison to the Portsmouth example (left).** (50)

**The narrow clapboards brings an intimate scale to the main structure of the Three Chimney's Inn** (46)

**The mammoth concrete headers over the openings convey an outsized (non-human) scale to this Williams College (Massachusetts) building.** (51)

## K) Proportion

1) Definition. Proportion is the relationship [illegible] such as:

- height of a window compared to its width,
- height of a building compared to its width,
- width of windows compared to the wall space between them,
- area of windows on a building façade compared to the area of wall space,
- height of a column compared to its width, or
- height of columns compared to the spacing between them.
- size of building appendages (such as dormers or a porch) compared to the overall size of the main structure

2) Ratios. Proportion is expressed as a ratio, such as 1:3, or as a fraction, such as 1/3. For example, a window that is one foot wide and five feet high (1:5 or 1/5) has elongated proportions. When one speaks of a building as having "good proportions" this means that the various individual ratios embodied in the building are harmonious with one another.

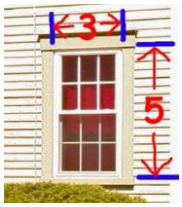
3) Proper Proportion. Use of proper proportions conveys a sense of order, balance, and calm, and enhances beauty, while use of poor proportions is unsatisfying and even unsettling.

Buildings shall be designed to convey a sense of proper proportion. Generally, taller proportions are more satisfying in a townscape, as vertical proportions evoke the human body. Vertical proportions shall prevail especially in the highly pedestrian-oriented Central Business District. Horizontal proportions are compatible with pastoral landscapes but they also evoke the automobile, and thus predominantly horizontal

proportions are appropriate only in the Courthouse District. Many houses in the Church Hill District are horizontal in overall shape and in the foundation, cornice, and ridgeline. That horizontality is balanced by the verticality of the entry door, porch columns, windows, dormers, and corner treatments.

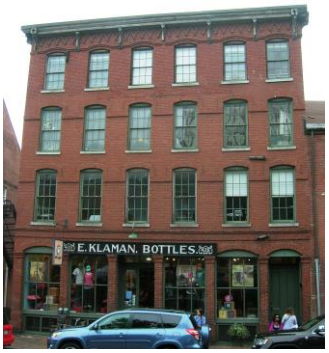
4) Golden Section. The golden section, which is the ratio of approximately 3:5 or 5:8 is a good guide to proper proportion. Many windows and building facades in traditional buildings approximate the golden section. For example, numerous golden sections are expressed in various components of the Parthenon.

***Appropriate***




**This window demonstrates the golden section.** (Photo by Roger Hawk) (52)

**These windows in St. Thomas More Church are narrower than 3:5 but are elegant.** (53)




**The excellent proportions of these two Portland, Maine buildings are innately satisfying.** (54&55)

***Inappropriate***

**It is doubtful that these two façades were laid out with much consideration or knowledge of proportion. (**56&57)

**The dormers are out of proportion relative to the rest of the house resulting in an ungainly, top-heavy appearance.** (58)

**L)** **Height.** Note that height limits and related principles, including treatment of "story" are specified in the Zoning Ordinance. This section provides standards to be met within those parameters.

1) Minimum height. Buildings shall contain at least two stories (and preferably at least 2-1/2 stories), in order to reinforce the streetscape. The only district where this is not essential is the Courthouse District, though it is still preferred. Where a single story is used (and often, also when there are only two stories), such as in part of the Courthouse District, devices - such as a high parapet (as shown on these two buildings below), a tall story, a corner tower, or a steep roof - shall be incorporated to add stature to the building.

**Rochester – new façade** (59)

**Rochester** (60)

2) Maximum height and criteria for taller buildings. On the other hand, buildings shall not be so tall as to create a canyon effect and be out of scale with the human form and surrounding buildings. With the tallest buildings, it may be desirable to employ techniques to reduce the sense of height.

Within the Central Business District, buildings taller than three stories may be erected only: a) if and as permitted in the Zoning Ordinance; and b) if the Planning Board determines that a building taller than three stories is appropriate based upon the criteria (a – k) given below. The Planning Board shall also consider the following criteria in determining whether an especially tall structure is appropriate in any of the five districts, especially when unusually tall stories are involved (A typical building story is 11 or 12 feet +/- with lower stories often taller than upper stories).

a) Its location, whether midblock or at a prominent corner (greater height is generally appropriate at the corner except where adjoining a street or area of lower scale)

b) The width of the building (greater height is generally appropriate with narrower buildings)

**There are numerous variables to consider – Portsmouth** (photographer unknown) (61)

**An iconic structure - Dover** (62)

c) The number of stories and height of each (greater height is generally more appropriate with taller stories)

d) The type of roof used and whether a cornice line is established at a lower story (establishing the cornice line at a lower level can reduce the apparent height)

e) The placement and character of the upper stories, whether they are set back or otherwise made less apparent (if set back or less apparent then greater height is generally appropriate)

f) The use and nature of the building and whether it is an iconic structure (an iconic structure may merit greater height)

g) The balance of vertical and horizontal elements (a good balance can mitigate height)

h) The scale and quality of materials and details (quality in overall design can mitigate height)

i) The height of the adjacent buildings (great height is more appropriate next to taller buildings)

j) The width of the street (a wider street can better accommodate greater height). See next subsection.

k) Topography of the location and solar access, whether for the building itself or for its neighbors

3) Height-width ratio of street. The relationship/ratio between: a) the average height of buildings on both sides of the street, and b) the average width measured across the street between those facing buildings on opposite sides of the street, impacts the feel of a street. If the ratio is too low, such as 1:4, then there will fail to be a sense of enclosure created by the low facing street walls. If the ratio is too high, such as 2:1, then a canyon effect will result. (These two examples are given for illustrative purposes only.)

4) Mitigating height. Additional height/stories can be mitigated by techniques such as setting back the top story(ies); using a pitched roof; making the top floor visually lighter or less intrusive in some manner; or incorporating more horizontal elements into the design. Incorporating a gable as part of the roof allows for an additional story (or partial story) with less impact than adding an entire floor with a flat roof. These four buildings illustrate methods for mitigating the impact of an additional story (though these buildings are not necessarily appropriate for Durham).

**Portland, ME** (63)

**Portland, ME** (64)

**Portland, ME** (65)

**Ghent, Belgium** (66)

5) Gables. Most existing gable structures in the Core Commercial area are 2-1/2 stories, although a few are 3-1/2 stories. Gable structures over 2-1/2 stories shall be carefully executed in order to not appear ungainly or out of scale.

6) Variation in heights. Some variation in building height within a block is desirable to help break up the *mass* of the block and to create variety and interest; generally, however, there shall not be more than a one- or 1-1/2 story difference in height between adjacent buildings in order to maintain continuity along the streetscape. This limitation does not apply when the adjacent building is one story.

7) First floor. The first floor shall be at grade or preferably raised slightly above grade. It shall be prominent and readily discernible as the first story. If there is a lower level or basement floor it shall be situated entirely or mostly below grade in order that it read clearly as a basement level and cause no confusion as to which is the first story.

## M) The Roof

1) Special treatment required. As a design element the roof - serving as a hat, of sorts - has a significant effect on the character of a building. The lack of a roof – or some special treatment of the *cornice* - can promote a feeling of a boxiness, which can read as clumsy or graceless. The roof shall be treated in a special manner, with a gable, a cornice, a frieze band, dentils/brackets, a parapet, or some combination of these. The taller the building, however, the less necessary is a pitched roof.

2) Extensive roof areas. Extensive areas of visible roof shall be broken up with dormers, cross gables, cupolas, chimneys, parapets, balustrades, towers, and/or other such elements.

3) Gable roofs. Front-facing gable roofs shall generally not be used on wide buildings as the gable would be either too shallow to span the width or excessively large and high. Generally, 2-1/2 stories is the ideal height for gable-roof buildings. Front-facing gables shall have a minimum roof pitch of 4/12. The pitch of the gable shall be compatible with the architectural style. For example, a lower pitch is used on Greek Revival buildings than on Italianate buildings.

4) Roof styles. Roof styles in the Core Commercial area shall be limited to flat roofs, gable roofs, hip roofs, and shed roofs (the latter on dormers or appendages only. However, gambrel roofs are also appropriate in the Coe's Corner district, but not in other districts as they are evocative of a rural setting. Eccentric roofs shapes and combinations of different roof styles/shapes shall not be used.

**Gambrel roof** (67)

5) Mansard roofs. Mansard roofs (as shown on the right) shall not be used. They are strongly associated with one specific architectural style – the 19th century Second Empire Style – and generally project a sense of kitsch when used on new buildings.

**Mansard roof** (68)

6) Eaves. Eaves shall have a minimum depth of six inches to create a shadow and be discernible.

7) Pitched roofs. All buildings in the Church Hill, Coe's Corner, and Professional Office Districts shall have a pitched roof.

8) Green roofs. Use of "green" or vegetated roofs and incorporation of solar panel arrays is encouraged (though not required under these architectural standards) and it is understood that accommodations may be needed in

the design to provide for these elements, as well as structures serving roof top agriculture.

## *Appropriate*

**Notice the elaborate brickwork at the cornices on these two Rochester buildings.** (69)

**Dormers shall not include siding but rather be a solid casing from the window to the corner of the dormer wall.** (70)

**Where an eave return is used, it shall be horizontal and underlay the raking cornice as shown on the Grange.** (71)

**Cupolas, cross gables, and dormers shall be used to break up the expanse of roof, as shown on these three Durham properties.** (71, 72 & 73)

**The deeply-projecting eaves, with closely-spaced brackets, on the Grange.** (74)

## *Inappropriate*

**The lack of attention given to the roofs of these two buildings adds to their lack of appeal**. (75)

**The improper use of siding material around this dormer adds to the sense of it being unduly large.** (76)

**Porkchop eaves are clunky and inappropriate**. (77)

**Cross gables shall rise straight from the wall below, with no extension of the roof across the bottom of the triangle.** (78)

**Gable roofs shall not be used on the broad side of buildings, nor shall eccentric roof forms be used.** (79)

**Nesting gables bring unnecessary clutter.** (80)

**N) Windows**

**Portland, ME** (81)

1) Regular pattern. Windows are an integral part of a building and shall be richly incorporated on front facades, and to a lesser extent, on side facades. The windows along the front facade, and to a lesser extent, on the side façade, along with the door and other decorative elements shall align horizontally and vertically in order to establish a coherent, orderly pattern and rhythm. Some departure from a perfect grid is desirable in order to create variety in rhythm as demonstrated in this Federal-style structure (the window height decreases with each story and the space between the outer windows is narrower than the space adjacent to the middle windows).

2) Vertical form. Primary windows and window panes shall be vertical in form, with horizontal-to-vertical proportions generally measuring 3:5. In cases where horizontal "ribbon" windows may be acceptable, such as in the Courthouse District, there shall be a series of contiguous vertical windows with prominent fixed mullions in between, arranged in a horizontal band. (This is also required for storefronts. See that section below.)

3) Window style. The primary window style – with the exception of storefronts and buildings located in the Courthouse District – shall be double hung (whether operable or not). A limited number of fixed windows (i.e. those which have one window sash/frame and do not open) may be used where deemed appropriate to the overall design.

4) Shutters. If shutters are used they must be fully functional or appear to be fully functional. They shall be sized properly for the window opening – i.e. each shutter should be the full height of the window and approximately one half the width of the opening. Fake shutters screwed in flat to the wall shall not be used.

5) Window molding. Windows in wood frame buildings shall have a wide (generally four inches) molding/trim on all sides. Windows in brick buildings shall have a distinct lintel above and sill below, though treatment of the side jams is encouraged also.

6) Window to wall proportions. The proportion of window area to wall area on facades shall be carefully considered. Too little window area creates an

unwelcoming presence, while the use of too much glass can be jarring in the context of a traditional downtown.

7) Muntins/mullions. Windows - other than storefront windows and small, appropriately-designed fixed windows - shall be divided into multiple panes of glass. This approach helps the window "hold" the surface of the façade, rather than appearing like a hole in the wall (the effect produced by a large single sheet of glass).

## *Appropriate*

## *Inappropriate*

**The Grange addition and Ebenezer Smith House** (81&82)

**The regular pattern of windows in these three properties provides a pleasing rhythm. Such regularity is surprisingly not monotonous and serves to break up the scale of a large building, even a New England mill**. (83)

**Square windows, especially when unbroken by *muntins*, are inherently unsatisfying. This is evident in comparing the original and inappropriate picture windows on this Exeter building.** (91&92)

**Creative variation in the window pattern, can add interest as in the Durham Post Office.** (84)

**The ratio of glass to wall space on these two Portland, Maine buildings is way too high.** (92&93)

**These double windows on Durham buildings are properly separated by strong, wide mullions.** (85)

**Double and triple windows shall be separated by a strong vertical mullion, so that each window reads as a completely separate window.** (94)

**All windows in masonry buildings shall have a distinct lintel over the windows, providing structural, or at least convincing visual, support to the window opening.** (86)

**There is no lintel, or special treatment, over this window, so it appears that the brick above would simply collapse.** (95)

**In these two windows in Hetzel Hall, the splayed arch over the window on the left, is functional, whereas the bricks over the window on the right would collapse without some invisible support underneath. Nonetheless, the window on the right is acceptable, though not preferable.** (87)

**The heavy lintel over the store windows does not even overhang the brick jams on the side and is visually, if not functionally, precarious**. (96)

**If shutters are to be used they shall be fully functional.** (88)

**Woodstock, VT**
**(photograph by Todd Selig)** (89)

**These shutters are screwed flat to the wall.** (97)

**Slider windows (above left on middle floors), awning windows (above right on top floor), casement windows (which swing out and are hinged on the vertical side) and large, fixed windows with no *muntins* (above left on first and top floors) are not appropriate**. (98&99)

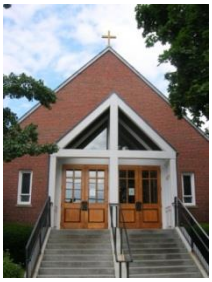
**A better approach is to simply design a handsome window and accent it with a rich trim rendered in a contrasting color, as shown here at the Three Chimney's Inn.** (90)

**O)** **<u>Entrance</u>.** The entrance is an important element in defining a building, and shall be articulated through use of special design features, such as a portico, an entry porch, a canopy, an awning, an arcade, a colonnade, sidelights, transom window, trim surround, or a combination of these. The entrance shall be located on the front façade, preferably in the center, and shall be prominent and readily recognizable. (See section on Storefronts, below.) Here are some good examples:

**Door surround Ballard House** (100)

**Portico/Entry Porch Three Chimney's Inn** (101)

**Full-width porch on new building in Williamstown, MA** (102)



**St. Thomas More Church** (103)

**Holiday Inn Express** (104)

## P) Building façades

1) Cohesiveness. Overall, there shall be a cohesive, if not regular pattern in the façade.

2) Tripartite structure. Buildings shall generally have three distinct parts: a base, a midsection, and a top. This evokes the classical column (with its base, shaft, and capital), and the human form (with our feet, body, and head).

3) Depth. Some depth shall be created on the front façade. Shallow depth is created through use of trim/details projecting forward from the façade. Greater depth is accomplished through use of porches, projecting or recessed sections, bay windows, or arcades. Inclusion of a usable front porch (generally measuring eight feet in depth, with no screens) on residential buildings is strongly encouraged.

4) Embellishment. Traditionally, the parts of a facade that may be embellished/articulated in some fashion include the following. A number of these elements shall be incorporated for every building.

   a) The horizontal base where the building meets the ground (such as a special treatment for the foundation or a water table).

   b) The horizontal top where the building meets the sky (such as a projecting cornice with brackets)

   c) A horizontal section in between (such as a belt course between stories)

   d) The vertical corners on the left and right sides (such as corner boards or quoins)

e) Vertical articulation in the middle (such as pilasters)

f) The area around the door/entry (such as a portico)

g) The areas around the windows (such as window surrounds)

h) Embellishment of the walls such as with decorative brickwork, inset tiles, terra cotta panels.

## *Appropriate*

**The Dover Public Library has a distinct bottom, middle, and top. The pavilion, dentilled cornice and *pediment*, arches, engaged columns, corner *quoins*, and profusion of colors and materials give it a rare exuberance.** (105)

**Pilasters are used to articulate the nicely-proportioned façade of this Dover building.** (106)

**These two buildings in the Professional Office District use decorative wood trim and cross banding to great effect.** (107&108)

**Bay windows add vibrancy.** (109) **Porches enliven the street.** (110)

## *Inappropriate*

**The new courthouse in downtown Dover suffers a fatal flaw in emphasizing horizontality over verticality.** (111)

**Blank walls stifle pedestrian vitality by creating visually dead space - Portland Art Museum** (112)

**The ornamentation on this big box seems to be quite random.** (photographer unknown) (113)

**A series of stepped back facades is often used in a misguided attempt to add interest to building.** (photographer unknown) (114)

## Q) Materials

**This iconic house on Newmarket Road is a rare example built with shale.** (115)

1) Appropriate materials. Buildings in the Core Commercial area were traditionally constructed of brick or sheathed in wood clapboard. These are the preferred materials for new construction. Materials shall be high quality, durable, and substantial in appearance. Natural materials, or materials that effectively mimic natural materials shall be used. Because vinyl siding conveys an insubstantial plastic feel it is not appropriate in the denser, more public, higher value core commercial areas.

Appropriate materials for the main walls of the structure include:

- deep-red brick,
- painted or stained wood clapboard,
- fiber reinforced cement clapboards (products from companies such as James Hardie and Smartboard), which effectively mimic wood clapboards,
- cellular PVC (from companies such as Azek and Versatek) for trim boards, which effectively mimic wood trim,
- natural stone,
- painted or stained wood shingles/shakes in the Professional Office and Coe's Corner Districts only. Shingles/shakes convey a rustic feeling and are thus not appropriate in the Central Business, Church Hill, nor Courthouse Districts
- high quality simulated brick

2) Inappropriate materials. Vinyl siding, aluminum siding, plastic, sheet fiberglass, T-111 plywood, flaky shingles, salvage-style brick with multiple colors, prefabricated metal wall panels, undressed concrete, and cinder block shall not be used (except on facades that are not visible, or substantially not visible, from the street).

3) Foundations. Foundations shall be composed of, or clad with, concrete, textured block, brick, or stone.

4) Mixing materials. Except for the trim and details, mixing wall surface materials shall generally be avoided except for mixing materials between storefronts and upper stories, and when employing a architectural style which historically mixed materials.

5) Clapboard width. Clapboards shall show about four inches to the weather. Wider clapboards shall generally not be used, unless the Planning Board determines that wider boards better fit the character of the building.

***Appropriate***

**A high-quality red brick is used on this new Williamstown, MA building.** (116)

**Handsome, durable masonry and metal are used on this Rite Aid in Exeter**. (117)

**Only natural stone shall be used, as in St. George's Church. Stone shall be laid in roughly horizontal patterns or it will have an artificial wallpaper quality.** (118)

**Cellular PVC is used for trim on the Unitarian Church function hall.** (119)

***Inappropriate***

**It is now vogue to mix clapboard and shingles, usually in vinyl (top), and other materials (above). Use of more than one primary material on the façade often presents a lack of clarity or focus in design.** (120&121)

**There is an overriding plastic feel about this building clad in vinyl.** (122)

**Multicolor, salvage-style brick is not appropriate.** (123)

**Insubstantial or eccentric materials, like this thin metal siding, shall not be used.** (124)

**R)** **Color**

1) Colors shall generally blend with nature, i.e. be earth tone, neutral, or pastel in character. Primary, high intensity, bold, metallic, or fluorescent colors shall not be used. Bright colors are generally inappropriate, but, if used at all, shall be limited to accent areas. It is recognized that some discernment is required to distinguish between bright colors which are garish and those which are playful or decorative.

**Deep, rich colors on the Dover train station** (125)

2) Colors with no tradition in this region, such as Mediterranean types of colors used in Florida, are not appropriate.

3) Subtle colors are appropriate on larger, plain buildings whereas smaller buildings with more detailing can more effectively incorporate stronger colors.

4) Multiple colors. Generally, it is preferable to use two or three colors on one building. If more than one color is used, then one color shall dominate and the other(s) be used for trim or accent. Multiple colors shall be harmonious with one another. Example: An effective color scheme on wood frame residential property is to use a medium dark color for the body, a light color in the same family of colors for trim, and a bolder color, such as red, for the front door.

5) Brick. Brick shall be a deep red or reddish brown.

6) These types of colors are not appropriate. The three colors on the left are unduly bold and the color on the right is not appropriate for this region.


(126 – 129)

**S)** **Lighting of buildings.** Only low key, low intensity wall pack, gooseneck (as shown on the building to the right), or spot type lighting of building exteriors is appropriate. Use of lighting to

**Dover** (130)

highlight the building in a prominent manner, such as with brightly illuminated roof fins or neon tube lighting is not appropriate. (See also Article XXIII. Signs and Utility Structures in the Zoning Ordinance.)

T) Storefronts

**Portland, Maine** (131)

1) Compatibility with rest of building. The design of the storefront shall be compatible with the character of the rest of the building, to the extent possible, recognizing that the storefront is a separate design element.

2) Three sections. Storefronts shall have three distinct parts: a base or "bulkhead", tall and open glass display windows, and a wide lintel, band or crown over the windows to visually separate the storefromt from the upper floors.

3) Windows. Use of large plate glass type windows is appropriate provided each window is vertical in orientation. Large panes shall be separated from one another along wide glass openings with substantial fixed wood or metal mullions. Fake grilles and grids shall not be used. Glass shall be untinted, except for the use of stained glass, which is encouraged.

4) Awnings. Use of awnings is encouraged. Awnings shall be made of canvas and be a minimum of three feet deep. In the Central Business District awnings shall be five feet deep (A greater depth is called for in that district since awnings there are likely to shield pedestrians). Awnings shall be positioned above the storefront window but below the lintel/sign band.

## *Appropriate*


**This storefront in Dover has three distinct and attractive vertical sections.** (132)

## *Inappropriate*


**The base/bulkhead is too low and the expanse of large glass panes is too extensive.** (136)

**If a grille is to be used it shall be composed of real through-*muntins* and separate panes of glass.** (133)

**The windows are squat/square and the fake grille impedes visibility. Clapboards are generally too rustic in character to use on a storefront.** (137)

**The canvas awning at the Durham House of Pizza is inviting to patrons.** (134)



**Vinyl awnings pulled tight over the frame convey a plastic feeling.** (138)

**The storefront in Dover is open and clear and the recessed entry draws in customers (although it would be preferable to break up the size of the glass with a few *mullions.*** (135)

## U) Specific Building Types And Building Elements

1) **Utility Elements.** All utility elements, such as dumpsters, utility meters, and ground mounted air conditioning units, shall be screened and located such that they are not visible from a public way. Rooftop utilities shall be screened with raised parapets or other devices.

2) **Garages.** Garages (private and public) and garage doors shall be unobtrusive. Doors shall be placed on side facades not facing the street, doors shall be fully screened from view by landscaping or other structures, and/or garages shall be set back substantially from the street.

***Appropriate***

**This parking garage in Portland, ME is screened by "liner businesses" and street trees.** (139)

***Inappropriate***

**Garage doors shall not face the street.** (140&141)

3) **Gasoline Stations.** Canopies shall incorporate features to avoid the sense of a gigantic, hovering mass. A pitched or hipped roof shall be used. The fascia of the canopy shall be short in height and the columns shall be articulated in some manner. All vertical surfaces shall be nonreflective and colors shall be muted.

***Appropriate***

**Durham** (142)

**Northwood** (143)

**Meredith (photo by Roger Hawk)** (144)


***Inappropriate***


(145)

***DEFINITIONS***

Note. Definitions are provided for many words that are not included in the text of these regulations for the purpose of enhancing discussions about architectural design among applicants, designers, staff, and the Planning Board.

**Arcade:** A series of arches supported by columns, sometimes forming a covered walkway.

**Arch:** A curved form spanning an opening, which may take various rounded forms including a pointed shape.

**Axis:** A line established by two points in space and about which forms and spaces can be arranged.

**Axonometric drawing:** A drawing showing a building in three dimensions.

**Awning window:** A single sash window that opens outward from the top.

**Baluster:** The upright part of a railing, often vase-shaped, which supports the top rail.

**Balustrade:** A series of balusters with a rail.

**Bay:** Vertical division of a building façade, delineated by some regular recurring feature such as windows or columns.

**Bay window:** A window element projecting outward from a building facade.

**Bond:** The pattern formed by bricks in a wall using one or more sides or positions (oblong or upright) of the brick.

**Box:** Generally refers either to "big box" or "small box"; a very simple building with minimal adornment or complexity in its form, usually a rectangular footprint with a flat roof, and few if any windows.

**Bracket:** A structural (or visually structural) element projecting from a wall which supports a roof overhang or other overhang, generally in the form of an "L" or a triangle (see photo).

**Brackets** (147)

**Build to line:** The opposite of the conventional minimum front setback requirements, i.e. a *maximum* setback to which buildings must be placed.

**Bulkhead:** The base section of a storefront, located underneath the windows.

**Cantilever:** A horizontal element projecting from a wall without external support.

**Capital:** The top portion of a column or pilaster crowning the shaft.

**Casement:** A single sash window that opens outward from the side.

**Clapboard:** Narrow, horizontal, overlapping wooded boards, typically in wood, that form the outer skin of an exterior building wall.

**Colonial:** The style of architecture in the American colonies in the 17th and 18th centuries (prior to the American Revolution), derived mainly from English traditions.

**Colonnade:** A row of columns supporting a roof, arches, or an entablature.

**Column:** A freestanding upright support element usually round in cross section. In classical architecture consists of a base, shaft, and capital.

**Column, engaged:** A column, which is attached to a wall (round in cross section).

**Corner board:** A decorative vertical board placed at the corner of a wood frame building.

**Cornice:** Horizontal projecting top portion of an entablature or any linear element placed along the top of a building's facade or atop a section of the facade to divide the facade into sections.

**Course:** A horizontal decorative band extending across a façade (as shown here).

**Course - Old Portsmouth Library** (147)

**Course, belt:** A wide course.

**Course, string:** A narrow course.

**Cupola:** Small enclosed or partially enclosed structure crowning a roof or tower.

**Dentils:** Small, rectangular blocks arranged in a tooth-like series under an overhang.

**Dormer:** Window rising vertically atop a roof.

**Double hung window:** A window with two vertical sliding sashes, each closing half of the window opening (as shown here).

**Double-hung window** (148)

**Eave:** The horizontal or downward projecting overhang at the lower edge of a roof.

**Eave, porkchop:** An eave return which is boxed in, in the shape of a triangle.

**Eave, return:** A short section of the eave which wraps around onto the gable side of the building.

**Elevation:** A head-on drawing of a building facade, without any allowance for perspective; one exterior face or side of a building (comparable to a facade).

**Ell:** A wing of a building that lies perpendicular to the length of the main portion.

**Entablature:** The horizontal top part of an order of classical architecture. It is supported by columns and consists of three levels - architrave, frieze, and cornice.

**Exterior architectural appearance:** The architectural character, general composition, and general arrangement of the exterior of the building, including the kind, color, texture of the building material and type and character of all windows, doors, light fixtures, and appurtenant elements integral to, or affixed to, the building.

**Facade:** The front or principal exterior face of a building; may refer to other prominent exterior faces as well.

**Fascia:** A flat vertical board that forms the face along the edge of a flat roof or along the horizontal (or eave) side of a pitched roof. Also, the front vertical face of an awning.

**Fenestration:** Arrangement of windows on a façade including number, size, proportion, spacing, and composition.

**Finial:** Small vertical ornament at the top of a roof.

**Flaky shingles:** Irregular wood shingles, frequently untreated or stained rather than painted, with various curves and splits that give an appearance of peeling off an exterior surface (such as one might see at a "Fish Shack Restaurant").

**Foursquare:** A style of house built in the first few decades of the 20th century. The Foursquare is typically square or close to square in plan and somewhat cubic in volume, with a hipped roof with a dormer in the center of the front, and sometimes, on the side roof slopes.

**Four Square** (149)

**Frieze:** A decorative, horizontal band set just below the cornice.

**Frontispiece:** An ornamental portal around the entrance

**Gable:** A simple pitched roof form with two opposite sloping sides; the triangular part of a wall formed by a gable roof.

**Gable, cross:** A gable form attached to and placed perpendicular to a larger gable roof

**Gambrel:** A roof form with a double sloped profile - a steep lower plane and a less steep upper plane (A gambrel differs from a mansard in that a gambrel is two sided while a mansard is four sided, and the pitch of the two planes on a mansard is closer to 90 degrees.

**Golden section:** Mathematicians have studied the Parthenon in Athens, Greece, and found a complex series of golden sections in the façade. The golden section is a proportion that human beings seem to find innately satisfying. It is the ratio of 1 to 1.618… (an irrational mathematical constant, like pi), which is roughly equivalent to 5:8 or 3:5. The golden section is the ratio of x:y as derived from the width and length of a rectangle – with a width of x and a length of y – where x/y = y/x+y. There are numerous other standards of proportion, such as those developed by Leonardo Da Vinci, based on the human body.

**Half story:** The top floor of a building covered by a gable or hip roof (see photo), which therefore has less usable square footage than the full stories below.

**Hierarchy:** The articulation of the importance of a form by its size, shape, or placement relative to the other related forms.

**Young's Restaurant – a 2-1/2 story building** (150)

**Hipped (or hip) roof:** A roof which slopes upward from all four sides of a building and end in a ridge or end a point (see photo).

**Hipped roof** (151)

**Lintel:** A horizontal structural member that bridges an opening.

**Lozenge:** A diamond shaped ornament applied to a wall.

**Lunette:** A semicircular or half-moon window or other element on a facade.

**Mansard:** A steep, story-high roof with two planes on all four sides, the first plane almost vertical and the second plane above, nearly flat; named for Francois Mansart, 17th century French architect.

**Masonry:** Heavy materials including stone, brick, concrete, concrete block, and stucco.

**Massing (or mass):** The shapes, sizes, and arrangement of the three dimensional forms that compose a building.

**Medallion:** An ornamental plaque applied to a wall.

**Molding:** Decorative detailing applied around a window or door or to the surface of a wall.

**Mullion:** Vertical or horizontal element separating windows or doors set in a pair or series. A mullion differs from a muntins in that the former is permanent, more substantial, and connected to the walls (See "Muntin").

**Muntin:** Dividers between panes of glass within an individual window (See "Mullion").

**Neoclassical:** A formal style of design evoking ancient Greek or Roman architectural forms.

**Oriel window:** A bay window projecting from a building's upper floor.

**Panel:** A decorative rectangle raised or recessed on a wall.

**Parapet:** A low wall or railing extending above and in the front of a roof.

**Pavilion**: A full height projecting section in the middle of the front façade (in terms of Classical architecture, as opposed to a freestanding structure).

**Pediment:** Triangular front end of a roof, comparable to a gable except that a pediment always has an articulated horizontal side.

**Pergola:** An unenclosed structure with an open wood framed roof, often latticed.

**Piazza:** An open space oriented to pedestrians, usually rectangular in shape, defined by a building or buildings on two or more sides.

**Pier:** A freestanding upright support element, usually rectangular in cross section, and wider and more squat than a column.

**Pilaster:** A column or pier affixed to a wall surface (rectangular in cross section).

**Plan:** The layout of a building drawn in the horizontal plane.

**Porthole window:** A circular window (also called a bull's eye window).

**Portico:** A covered space usually supported by columns surrounding an entrance and forming the centerpiece of the facade.

**Proportion:** The relation of one dimension to another, such as the height of a window compared to its width. Scale is the proportion of the size of a building or building element to that of a different entity, usually a typical human being.

**Quoins:** Corner stones or other materials made to resemble stones, set at the corners of a building, window, or door.

**Quoins** (152)

**Rational Architectural Styles:** Formal styles derived from ancient Greek forms including Georgian, Greek Revival, Federal, Rennaisance-Revival, and Neoclassical. These styles generally embody simplicity, symmetry, balance, and regularity more than the free-form romantic or picturesque styles which are generally asymmetrical with irregular and complex masses and details.

**Rhythm:** The use of recurring patterns to organize a series of like forms or spaces.

**Ridge:** The linear intersection of two sloping roof planes.

**Sash:** A single window within its frame that opens in some manner.

**Scale:** The perception of the size of a building or building element relative to the human body or other buildings or objects in the vicinity. "Human scale" means the size of a building or building element is oriented toward the size of a typical human being or such that a human being, whether stationary or in motion, adjacent to or passing by, will perceive the size to be comfortable.

**Sense of enclosure:** An outdoor area where the height and continuity of adjacent or surrounding buildings or other structures loosely establishes the feeling of a three dimensional space.

**Shed roof:** A roof composed simply of one sloping plane.

**Sill:** The horizontal bottom element of a window or door frame.

**Skin:** The outer clothing or membrane of a building - clapboard, brick, steel, etc.

**Soffit:** The underside of any building part, such as under an eave, arch, or lintel.

**Story** (also called "floor"): The complete horizontal division of a building, situated at or above ground level, comprising the usable space or room(s) on one level. Each such division is considered one full story, except for the top level when it is under a sloped roof, which is considered a half story. (See "Half story.")

**Street wall:** A street wall is the part of a building that faces the street, but it generally refers to how and where several buildings line up to define a proper walking environment.

**Surround:** An ornamental device used to enframe a window or door.

**Symmetry:** The balanced distribution of equivalent forms and spaces about a common line (axis) or point.

**Termination of a vista:** Strategic placement of a building, tower, or iconic element at the end of a street, in the center of view, perpendicular to the buildings on both sides, intended to provide a focal point in front of the viewer (See photo to the right).

**Terminating a vista** (153)

**Texture:** The quality of finish on a wall or roof surface.

**Tower:** A distinctly vertical structure, which may be freestanding or attached to another structure.

**Traditional:** Sensitive to, evocative of, or harmonious with any particular style of architecture established prior to1950 except for Modernism.

**Turret:** A small, slender tower usually located at the corner of a building.

**Victorian:** Term used to cover all of the various styles of architecture during the reign of Queen Victoria - 1837 to 1901, including Second Empire, Italianate, Gothic Revival, Colonial Revival, Queen Anne, Renaissance Revival, and others. (Georgian, Federal, and Greek Revival styles predate the Victorian era.)

**Water table:** A masonry feature that consists of a projecting course that deflects water running down the face of a building away from lower courses or the foundation.

## *SECTION 10: Independent Studies and Investigations*

***10.01***. The Planning Board reserves the right to require additional studies to determine the potential impact of the proposed site development. Studies may include, but are not limited to, Traffic Impact Analysis, Fiscal Impact Analysis, and Environmental Impact Analysis.

A. All Traffic Impact Analysis shall be presented in accordance with the "Strafford Regional Planning Commission's Guidelines for Traffic Impact Analysis 1986," incorporated into these regulations by reference. The Planning board reserves the right to retain the services of an outside agency for the purposes of reviewing any traffic impact analysis submitted.

B. All Fiscal Impact Analysis shall be presented in accordance with the "Strafford Regional Planning Commission's Guidelines for Fiscal Impact Analysis 1988," incorporated into these regulations by reference. The Planning board reserves the right to retain the services of an outside agency for the purposes of reviewing any fiscal impact analysis submitted.

C. The Environmental Impact Statement specifications will be dictated on a case by case basis. (Amended January 7, 1998)

***10.02***. Wherever, in the opinion of the Board, traffic generated by a development will adversely impact existing public streets, the Board may require improvements to be made to such streets and intersections in an effort to mitigate such impacts. (Amended January 7, 1998)

## *SECTION 11: Post Construction Requirements*

***11.01***. All deeds covering land to be used for public purposes, easements, and right-of-ways over property to remain in private ownership, and rights of drainage across private property shall be submitted in a form satisfactory to the Town Attorney. (Amended January 7, 1998)

***11.02***. As-built construction drawings, plan and profile, of all infrastructure improvements at a scale of 1" to 20', including, but not limited to:

A. Underground Utilities (sewer lines, storm drains, water lines, electrical, phone, cable, natural gas lines, etc.)

B. Drainage ways, ditching, impoundments, swales, etc.

C. Road construction. (Amended January 7, 1998)

***11.03***. Maintenance Guarantee--a financial surety to guarantee that all site work was properly done shall be posted by the applicant with the Town. Such maintenance guarantee shall be in an amount of two percent of the estimated project cost and shall remain in force for two (2) years after site improvements are completed. If such repairs are needed and are not satisfactorily installed by the developer, then such guarantee shall be used to complete and/or install such improvements. (Amended January 7, 1998)

## *SECTION 12: Administration and Enforcement*

### *12.01 Administration*

These regulations shall be administered by the Planning Board. The enforcement of these regulations is vested in the Town Council.

### *12.02 Waivers*

The requirements of the foregoing regulations may be waived when, in the opinion of the Board, specific circumstances surrounding a site plan application, or a condition of the land of such application, indicate that such waivers will insure that the purpose and intent of the Master Plan and these regulations will be properly carried out.

### *12.03 Penalties and Fines*

Any violation of these regulations may be subject to a civil fine as provided in RSA 676:16 and 676:17, as amended. The Town Council and the Code

Enforcement Officer are designated as the local authorities to institute appropriate action under the provisions of RSA 676:17.

### *SECTION 13: Conflicting Provisions*

Where these regulations are in conflict with other local, state, or federal ordinances, the more stringent shall apply.

### *SECTION 14: Validity*

If any section or part of section or paragraph shall be declared invalid or unconstitutional, it shall not be held to invalidate or impair the validity, force, or effect of any other section or sections or part of a section or paragraph of these regulations.

### *SECTION 15: Amendments*

These regulations may be amended by the Planning Board following a public hearing on the proposed changes. Such changes shall not take effect until a copy of said changes, as approved by a majority of the Board, are filed with the Town Clerk.

The following attachments are incorporated into these regulations:

***Attachment 1: Formal Application for Site Plan Review***

***Attachment 2: Request for Preapplication Review (optional)***

***Attachment 3: Notices***

a) Design Review
b) Submission of Formal Application

***Attachment 4: Notice of Decision***

a) Approval
b) Disapproval

***Attachment 5: Sample Construction Guarantee Contract.***

***Attachment 6: Stormwater Management Checklist***

***Attachment 7: Energy Considerations Checklist***

## *SECTION 16: Modifications to Personal Wireless Service Facilities*

***16.01*** A modification of a personal wireless service facility is considered equivalent to an application for a new personal wireless service facility and requires a site plan review when any of the following events apply:

A. The applicant and/or co-applicant wants to alter the terms of the site plan by changing the personal wireless service facility in one or more of the following ways:

1) Change in the number of facilities permitted on the site; or

2) Change in technology used for the personal wireless service facility that will affect the visible elements of the facility, or that would alter the amount(s) and/or type(s) of hazardous materials used at the facility.

B. The applicant and/or co-applicant wants to add any exterior visible equipment or additional height not specified in the approved site plan.

(Amended January 7, 1998)

*Attachment 1*

## APPLICATION FOR SITE PLAN REVIEW

Note: This form and all required information must be filed at least 21 days before the date of the meeting at which it is to be submitted to the Board. Filing is to be done at the Planning Office, Durham Town Office Building or by mail to 15 Newmarket Road, Durham NH 03824.

1. Name, mailing address and telephone number of applicant

_____
_____
_____

2. Name, mailing address and telephone number of owner of record if other than applicant

_____
_____
_____

3. Location of Proposed Project _____
_____

Tax Map _____ Lot Number _____ Zoning District _____

4. Name of Proposed Project _____

5. Number of units for which approval is sought _____

6. Name, mailing address and telephone number of surveyor and/or agent

_____
_____
_____

*7.* Abutters: Attach a separate sheet listing the Durham Tax Map number, Lot number, name, and mailing address of all abutters, including those across a street, brook or stream. The list of abutters must also include any holders of conservation, preservation, or agricultural preservation restrictions in accordance with RSA 676:4(I)(d). Names should be those of current owners as recorded in the tax records five (5) days prior to the submission of this application. ***Note: Names submitted on the Request for Preapplication Review may not be current. No application shall be heard unless all abutters as described herein have been notified.***

8. Items on the attached Site Plan Review Application Submission Checklist

9. Payment of all applicable fees:

| | |
|---|---|
| submittal fees | $_____ |
| advertising/posting costs | _____ |
| abutter notification (each) | _____ |
| proposed road (per foot) | _____ |
| administrative and technical review costs | |
| | _____ |
| TOTAL | $_____ |

10 The applicant and/or owner or agent*, certifies that this application is correctly completed with all attachments and requirements, and that any additional costs for engineering or professional services incurred by the Planning Board or the Town of Durham, in the site plan review process of this property, shall be borne by the applicant and/or owner.

11 Within five (5) business days of submitting a formal application, the applicant shall meet with the Director of Planning and Community Development to discuss issues related to completeness and acceptance of the application. If this review discloses that all requirements specified on the Site Plan Application Checklist have not been met, the applicant will be notified in writing what specific items are still needed.

12 Prior to the next regularly scheduled meeting of the Planning Board, the applicant, at the discretion of the Director of Planning and Community Development, shall meet with the appropriate Department Heads of the Town of Durham to discuss the implications the application will have on the various Departments of the town.

13 If this application is determined by the Planning Staff to be complete, it will be placed on the Planning Board agenda on _____for acceptance.

***If the applicant is an agent of the owner, a separate signed letter from the owner of record is required which clearly states the authority of the agent or representative for this application. If the agent does not have the power of attorney of the owner, all documents shall be signed by the owner.**

"I hereby authorize the Durham Planning Board and its agents to access my land for the purpose of reviewing the proposed site plan, performing road inspections and any other inspections deemed necessary by the Board or its agents, to ensure conformance of the on-site improvements with the approved plan and all Town of Durham ordinances and regulations."

***Date*** _____ ***Applicant, Owner, or Agent*** _____

**Attachment 2**

## REQUEST FOR PREAPPLICATION REVIEW (OPTIONAL)

1. Name, mailing address and telephone number of applicant
   _____
   _____
   _____
2. Name, mailing address and telephone number of owner of record if other than applicant
   _____
   _____
   _____
3. Location of Proposed Development_____
   _____
4. City/Town of _____Tax Map _____ Lot Number _____
5. Type of development _____
6. Is this a request for _____Conceptual Consultation _____Design Review

*Note: If this is a request for Design Review, the applicant and the public must be notified. (See Site Plan Review Regulation, Section 5.04.)*

7. Abutters: Attach a separate sheet listing the Durham Tax Map, Lot number, Name and Mailing Address of all abutters, including those across a street, brook or stream. The list of abutters must also include any holders of conservation, preservation, or agricultural preservation restrictions in accordance with RSA 676:4(I)(d). Names should be those of current owners as recorded in the Tax Records five (5) days prior to the submission of this application.

**Advertising Costs** _____

Abutter Notification (each) _____

(Including applicant and/or owner)

_____ _____

**Owner/Agent** **Date**

**File # _____**

**Attachment 3a**

**NOTICE OF DESIGN REVIEW**

Planning Board, Town of Durham

Notice to Applicant: _____

_____

_____

Notice to Abutter: _____

_____

_____

Location of Proposal: _____

_____

Signed: _____

Chairman or Secretary
Durham Planning Board

Date:
_____

*NOTE: The applicant has requested preapplication discussion with the Board concerning the above proposal. The posted agenda will list the proposal when it is to be discussed. No public hearing is required. No material is submitted. No decisions are made. You will be notified when, and/or if, a formal application is submitted for review.*

**File # _____**

**Attachment 3b**

**ABUTTER'S /LEGAL NOTICE**

**SUBMISSION OF FORMAL APPLICATION FOR**

**SITE PLAN REVIEW**

Planning Board, Town of Durham
Date _____
Notice to Applicant: _____

_____

_____

Notice to Abutter: _____

_____

_____

Location of Proposed Site: _____

_____

Description of Proposed Development: _____

_____

Public meeting Date: _____

Public Meeting Time and Place: _____

This is a meeting to decide acceptance of the application **only,** no public comment will be solicited. If the Planning Board chooses to accept the application, the Board will schedule a site walk of the property and a Public Hearing. A separate notice of the Public Hearing will be sent and public comments will be solicited during the Public Hearing.

Signed: _____

Director of Planning, Zoning, and Code Enforcement

Date:

_____

NOTE: Abutters are invited to attend for their own benefit and information. They are not required by law to attend. Planning Board meetings are scheduled for the first and third Wednesdays of each month.

**File # _____**

**Attachment 4a**

**NOTICE OF DECISION - APPROVAL**

Planning Board, Town of Durham

You are hereby notified that the application of _____

to develop the site located on Tax Map _____, Lot # _____; with an address of _____ in the Town of Durham has been approved by majority vote of the members of the Planning Board on _____ with the following conditions:

_____
_____
_____
_____
_____
_____
_____
_____

_____

Chairman

Date:_____

**File # _____**

**Attachment 4b**

**NOTICE OF DECISION - DISAPPROVAL**

Planning Board, Town of Durham

You are hereby notified that the application of _____ for a site plan, located on Tax Map _____, Lot # _____; with an address of _____ in the Town of Durham has been disapproved by majority vote of the members of the Planning Board on _____ .

As stated in the Planning Board Minutes the motion to disapprove stated that the application was disapproved for the following reasons:

_____
_____
_____
_____
_____
_____
_____
_____
_____

_____
Chairman

Date:_____

**File #_____**

**Attachment 5**

*****SAMPLE*****

**CONSTRUCTION GUARANTEE**

KNOW ALL MEN BY THESE PRESENT THAT _____, _____ Street, _____NH, "Developer" of _____, is held and firmly bound unto the _____ Planning Board in the sum of _____ ($_____), for the payment of which Developer binds himself, his heirs, executors, and successors in interest and assigns by these present.

The Condition of this obligation is such that, if the Developer, his assigns or successors in interest, shall in all things, well and truly and properly perform and complete the following improvements and to be constructed on a Site Plan known as "_____," Tax Map_____, Lot(s)_____, to which conditional approval was granted by the Durham Planning Board on _____, 199__, then this obligation shall be void; otherwise to remain in full force.

| Bond Improvements | Required Date of Final Completion | Amount of Bond Required |
|---|---|---|
| 1. | | |
| 2. | | |
| 3. | | |
| | | _____ |
| | Total: | $ |

Final Completion Date:_____

Signature of Developer:_____ Date:_____[1]

[1] This Construction Guarantee shall not be effective until a financial surety acceptable to the Town has been posted with the Town in the amount set forth above. Additionally, the Construction Guarantee shall not expire and will be available to the Town as security for the proper performance of the Guarantee until sixty (60) days following the final completion date.

**Attachment #6**

# Stormwater Management Checklist (Incorporated into these regulations July 14, 2010.)

| | | | | |
|---|---|---|---|---|
| ☐ | **SITE PLAN REVIEW APPLICATION** | | **Project Name** | _____ |
| ☐ | **Date of Submittal ___/____/_____** | | **Applicant's Name** | _____ |
| ☐ | **Engineer** | _____ | **Architect** | _____ |
| ☐ | **New Development** | | ☐ | **Re-Development** |
| ☐ | **Total Area of Disturbance _____ Square Feet (SF)** | | | |
| | ☐ | < 10,000 SF and No Water Quality Threat *{No Stormwater Management Plan Required}* | | |
| | ☐ | < 10,000 SF and Possible Water Quality Threat *{Stormwater Management Plan Required}* | | |
| | ☐ | > 10,000 SF *{Stormwater Management Plan Required except as provided for in 9.03 (A) with an approved AOT permit}* | | |
| **STORMWATER MANAGEMENT PLAN – PART I** | | | | |
| ☐ | **EXISTING CONDITIONS PLAN** | | | |
| | ☐ | Title Block, Appropriate Scale, Legend, Datum, Locus Plan, Professional Stamp(s) | | |
| | ☐ | Topographic Contours and benchmarks | | |
| | ☐ | Buildings, Structures, Wells, Septic Systems, Utilities | | |
| | ☐ | Water Bodies, Wetlands, Hydrologic Features, Soil Codes, Buffer Zone | | |
| | ☐ | Area of Impervious Surface _____SF | | |
| | ☐ | Total Area of Pavement _____SF | Area of Pervious Pavement_____SF | |
| ☐ | **PROPOSED CONDITIONS PLAN** (include above existing and below proposed features) | | | |
| | ☐ | Title Block, Appropriate Scale, Legend, Datums, Locus Plan, Professional Stamp(s) | | |
| | ☐ | Topographic Contours and benchmarks | | |
| | ☐ | Buildings, Structures, Wells, Septic Systems, Utilities | | |
| | ☐ | Water Bodies, Wetlands, Hydrologic Features, Soil Codes, Buffer Zone | | |
| | ☐ | Impervious Surface Area _____ SF | Impervious Surface Increase_____SF | |
| | ☐ | Total Area of Pavement _____SF | Area of Pervious Pavement_____SF | |
| | ☐ | Effective Impervious Area (EIA)_____ SF | | |
| | ☐ | Stormwater Management & Treatment System (Describe System Elements Below) | | |
| | | ☐ | Name of Receiving Waterbody_____ | |
| | | ☐ | Closed Drain & Catch Basin Network | ☐ Connected to Town Closed System |
| | | ☐ | Detention Structure Types _____ | |
| | | ☐ | Structural BMP Types _____ | |
| | | ☐ | LID Strategies _____ | |
| | | ☐ | Estimated Value of Parts to be Town Owned and/or Maintained | $_____ |
| **STORMWATER MANAGEMENT PLAN – PART II** | | | | |

| | | | | | |
|---|---|---|---|---|---|
| ☐ | **DRAINAGE ANALYSIS** | | | | |
| | 24-Hour Storm Event | | Runoff | Pre-Development | Post-Development |
| | ☐ | 1-inch | Rate | _____Feet$^3$/Sec (CFS) | _____ CFS |
| | ☐ | 1-inch | Volume | _____Feet$^3$ (CF) | _____ CF |
| | ☐ | 2-Year | Rate | _____CFS | _____ CFS |
| | ☐ | 2-Year | Volume | _____CF | _____ CF |
| | ☐ | 10-Year | Rate | _____CFS | _____ CFS |
| | ☐ | 10-Year | Volume | _____CF | _____ CF |
| | ☐ | 25-Year | Rate | _____CFS | _____ CFS |
| | ☐ | 25-Year | Volume | _____CF | _____ CF |
| | ☐ | 100-Year | Rate | _____CFS | _____ CFS |
| ☐ | **EROSION & SEDIMENT CONTROL PLAN** | | | | |
| ☐ | **OTHER PERMITS OR PLANS REQUIRED BY USEPA or NHDES** (Where applicable) | | | | |
| | ☐ | USEPA Pre- and Post-Construction Stormwater Pollution Prevention Plan | | | |
| | ☐ | NHDES Alteration of Terrain Permit | | | |
| | ☐ | Other (Please list) _____ | | | |
| ☐ | **OPERATION & MAINTENANCE PLAN** | | | | |
| ☐ | **Need for 3rd Party Review?** YES _____ NO _____ | | | | |

*Attachment #7*

# ENERGY CONSIDERATIONS CHECKLIST

The Durham Energy Committee and the Durham Planning Board developed this checklist to encourage developers, applicants for Site Plan or Subdivision review, applicants for building permits, and Planning Board members to systematically consider the energy efficiency of Durham's new or renovated buildings and sites that are being developed or subdivided. Early discussion of such mandatory (where required under specific Town, State, or Federal standards) or optional energy efficiency measures may result in both energy and cost savings. For information on available funding energy efficiency improvements, see www.nhsaves.com. Completion of this checklist and a meeting with the Building Inspector and a representative of the Durham Energy Committee is required prior to any Planning Board site plan or subdivision approval.

Project Name _____

Date of Submittal _____

Applicant Name _____

Engineer Name _____

Architect Name _____

Project Contact _____

## *PART I. BUILDING CONSTRUCTION, SYSTEMS AND MATERIALS*

### 1. National Accredited Rating for Your Building(s)

These organizations have established energy-efficiency criteria. Qualifying applicants are encouraged to complete and attach the checklist from that certification (to be used for informational purposes only) and may then skip to Part III, "Consultation with Director of Zoning, Building Codes & Health."

| 1 | Check | Rating System | Website |
|---|---|---|---|
| 1.1 | ☐ | Passive House Institute | www.phius.org |
| 1.2 | ☐ | Living Building Challenge | living-future.org/lbc |
| 1.3 | ☐ | LEED | www.usgbc.org |
| 1.4 | ☐ | Energy Star | www.energystar.gov |
| 1.5 | ☐ | None of the Above | |
| 1.6 | Other | _____ | |

### 2. Energy Performance and Insulation, Zone 6 IECC

| 2 | Y | N | N/A | Method | Proposed | Reference |
|---|---|---|---|---|---|---|
| 2.1 | ☐ | ☐ | ☐ | Attic or ceiling insulation exceeds NH/Town code | R _____ | Chapter 38, Town |
| 2.2 | ☐ | ☐ | ☐ | Walls insulation exceeds NH/Town code | R _____ | Chapter 38, Town |
| 2.3 | ☐ | ☐ | ☐ | Air leakage testing proposed | _____ ACH @ _____ Pa | 3ACH@50Pa is NH/Town code |
| 2.4 | ☐ | ☐ | ☐ | Conventional slabs | R _____ | |
| 2.5 | ☐ | ☐ | ☐ | Radiant slabs | R _____ | |
| 2.6 | ☐ | ☐ | ☐ | Basement foundation | R _____ | |
| 2.7 | ☐ | ☐ | ☐ | Fenestration | U _____ | |
| 2.8 | ☐ | ☐ | ☐ | Hot water pipes | R _____ | |
| 2.9 | ☐ | ☐ | ☐ | Heating ducts inside envelope | R _____ | |
| 2.10 | ☐ | ☐ | ☐ | Heating ducts outside envelope | R _____ | |
| 2.11 | ☐ | ☐ | ☐ | Commissioning building to confirm performance | | |

| | | | | | |
|---|---|---|---|---|---|
| 2.12 | ☐ | ☐ | ☐ | Ventilation system proposed | Type: _____ _ |

### 3. Construction Methods and Materials

| 3 | Y | N | N/A | Method |
|---|---|---|---|---|
| 3.1 | ☐ | ☐ | ☐ | Net zero construction, i.e., building uses less than or same amount of energy it generates |
| 3.2 | ☐ | ☐ | ☐ | Energy-efficient doors and windows (including screens) |
| 3.3 | ☐ | ☐ | ☐ | Recycled content materials |
| 3.4 | ☐ | ☐ | ☐ | Locally sourced materials where available |

### 4. Internal Systems

| 4 | Y | N | N/A | Method | Proposed |
|---|---|---|---|---|---|
| 4.1 | ☐ | ☐ | ☐ | Lighting: high efficiency | Type: _____ |
| 4.2 | ☐ | ☐ | ☐ | Energy usage monitoring system(s), e.g., smart meters or submeters | |
| 4.3 | ☐ | ☐ | ☐ | Energy-efficient appliances (refrigerators, stoves, air conditioners, ceiling fans, etc.) | |
| 4.4 | ☐ | ☐ | ☐ | Cooling system efficiency | SEER _____ |
| 4.5 | ☐ | ☐ | ☐ | Heating system efficiency | AFUE _____ |
| 4.6 | ☐ | ☐ | ☐ | High-efficiency heating system or heat pumps | AFUE _____ |
| 4.7 | ☐ | ☐ | ☐ | Renewable hot water system (e.g., solar thermal) | SF _____ |
| 4.8 | ☐ | ☐ | ☐ | Photovoltaic renewable electricity generation system (i.e., solar panels) | _____ kW |
| 4.9 | ☐ | ☐ | ☐ | Daylight management (active or passive shades, overhangs, e.g., film, sensors) | |
| 4.10 | ☐ | ☐ | ☐ | Ability to charge electric vehicles | Level _____ |
| 4.11 | ☐ | ☐ | ☐ | Grey-water system (e.g., water from sinks or showers use for toilets or landscape) | |
| 4.12 | ☐ | ☐ | ☐ | Mechanical ventilation: heat or energy recovery ventilator | ___ % efficient |
| 4.13 | ☐ | ☐ | ☐ | Water usage monitoring system(s) | |
| 4.14 | ☐ | ☐ | ☐ | Cooling load reduction features, e.g., ceiling fans, solar-ray-blocking blinds | |

## *PART II: SITE AND SITING CONSIDERATIONS*

### 5. Solar Resource Utilization

| 5 | Y | N | N/A | Method |
|---|---|---|---|---|
| 5.1 | ☐ | ☐ | ☐ | Solar access (access of a solar energy system to unobstructed, direct sunlight) |
| 5.2 | ☐ | ☐ | ☐ | Solar-ready zone (a section of the roof or building overhang reserved for a future solar photovoltaic or solar thermal system with required internal conduit or plumbing pre-installed) |
| 5.3 | ☐ | ☐ | ☐ | Preservation of solar rights in subdivision or neighboring plots (e.g., solar skyspace easement) |
| 5.4 | ☐ | ☐ | ☐ | Orientation of internal streets to maximize solar resource for building roofs) |
| 5.5 | ☐ | ☐ | ☐ | Tree species selection and location for shading and cooling |

| | | | | |
|---|---|---|---|---|
| 5.6 | ☐ | ☐ | ☐ | Tree species selection and location to avoid blocking future solar access (for a solar energy system) |
| 5.7 | ☐ | ☐ | ☐ | Passive solar lighting design (optimizes natural illumination for interiors) |
| 5.8 | ☐ | ☐ | ☐ | Window placement maximizes winter solar penetration and minimizes summer solar penetration |
| 5.9 | ☐ | ☐ | ☐ | Vegetated rooftop(s) or other type of "green" roof to provide cooling and/or manage stormwater |

### 6. Parking, Transportation, Accessibility, and Connectivity

| 6 | Y | N | N/A | Method | |
|---|---|---|---|---|---|
| 6.1 | ☐ | ☐ | ☐ | Parking surcharges or incentives/rebates for tenants without cars ("no free parking") | |
| 6.2 | ☐ | ☐ | ☐ | Compact car space designation | |
| 6.3 | ☐ | ☐ | ☐ | Advanced technology and/or alternative-fuel car space designation (e.g., hybrids; "E85") | |
| 6.4 | ☐ | ☐ | ☐ | Pedestrian sidewalk network within the project area | |
| 6.5 | ☐ | ☐ | ☐ | Bicycle lane or path network within project area | |
| 6.6 | ☐ | ☐ | ☐ | Storage for bicycles outdoors | Please circle: secured \| unsecured -- covered \| uncovered |
| 6.7 | ☐ | ☐ | ☐ | Storage for bicycles indoors | Please circle: secured \| unsecured |

### 7. Landscaping and Covenant Terms

Lower water use not only results in reduced water bills but also reduces electricity usage at the Town's water and wastewater treatment facilities.

| 7 | Y | N | N/A | Method |
|---|---|---|---|---|
| 7.1 | ☐ | ☐ | ☐ | Rainwater storage, e.g., cisterns |
| 7.2 | ☐ | ☐ | ☐ | Xeriscaping (low-water-demand plants) |
| 7.3 | ☐ | ☐ | ☐ | Low-nitrogen-demand turf grass |
| 7.4 | ☐ | ☐ | ☐ | Rain garden or other "bio retention system" to manage site's storm water runoff |
| 7.6 | ☐ | ☐ | ☐ | Permit outdoor clotheslines (not prohibited by covenant rules) |
| 7.7 | ☐ | ☐ | ☐ | Permit installation of outdoor energy-efficiency devices, e.g., solar panels |

## *PART III: CONSULTATION WITH BUILDING INSPECTOR*

Consultation with the Building Inspector can help highlight and solve potential problems early in the project design phase and reduce overall costs of code compliance. A consultation with the Building Inspector and a representative of the Durham Energy Committee is required prior to approval of any site plan or subdivision application. A follow-up consultation with the Building Inspector, after Planning Board approval, is encouraged and will generally occur as part of the building permit application process.

Consultation Notes

Meeting Date:

Signature of Building Inspector: